# HUNTER VALLEY 99ers

## User Group Newsletter Christmas 1990

# Behold...a Child is Born!

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## CONTRIBUTIONS

Members and non members are invited to contribute articles for publication in the Hunter Valley 99'ers Newsletter.

Any copy intended for publication maybe typed, hand written, or submitted on disc media as files suitable for use with TI WRITER. A suitable public domain word processor program will be supplied, if required by the club librarian.

Please include along with your article sufficient information to enable the file to be read by the editor eg. filename etc. The preferred format is 75 columns and page length 66 lines, right justified.

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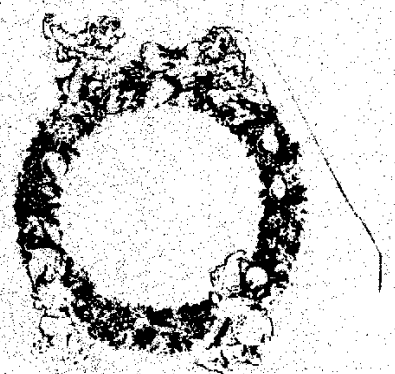


# President's Den..

Christmas greetings to you all. I am sure you wont be receiving a brand-new 99/4a in your stocking, but I am pretty certain you will be using your trusty friend sometime over the next few weeks. When you do I am sure you will enjoy the experience and hopefully you will learn something new in your encounter... That's the one thing which amazes me about the machine.. New things all the time. Even if you don't learn something new you certainly owe a debt to that fine little machine for all the teaching it has done in the past. I know it has been my introduction to computing and has certainly built a desire to learn more about/ and with/ these great machines.

To those members who ARE using their new QED RAM DISKS for the first time.. congratulations.. I am certain you will enjoy the experience and find the devices useful. I extend our appologies for the delays encountered, but we acted in good fail with our suppliers, just as you acted in good faith with us. Unfortunately our suppliers delayed their supply of bits and pieces and so a mad rush. When we finally got the parts the boards were made in a little over a week.. not bad for an amatuer club group.

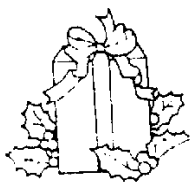
My thanks go to Albert Anderson for arranging all the little bits at the very best prices; Joe Wright for arranging the documentation and pal/gals; Al Franks for the great job he did of assembling the sockets, cappies, resistors etc and soldering them all in the correct places; Brian Woods for the packaging bit and worrying himself silly and handling all the correspondence (which certainly was not easy, but was completed in a most proficient and professional way); Ron Kleinschafer in particular, for the invaluable assistance in building a number of boards as models and some small modifications and then producing software which runs the boards and also tests them along with ordering bits and pieces and organising lists and running up huge phone bills. Also thanks goes to all those other people who assisted in many ways. It was certainly a great reviver for our club.

Our magazine is fairly brimming this issue. Thanks to all those who have contributed. It is especially good to see such quality items and also such a wide scope being covered. Each of you have contributed wisdon of different types and I don't think you can help but be impressed with the combined results.

1991 is bound to be crucial for our club as active membership will wayne, leaving even fewer to shoulder the responsibilities of the club. The need for all members to be active by contributing to all facets becomes greater as the club gets smaller. Among your New-Year resolutions make one about a renewed commitment to other TI users and our club.

From my family and myself.. Have a happy, refreshing and joyous christmas season and a prosperous year in all your endeavours.

Peter.



# From The Secretary's Desk

## OBIT - PETER GLEED

It is with regret I inform our members of the death of Peter Gleed, co-ordinator of the Melbourne Users Group. Peter became known so some of our members when we journeyed south to the Melbourne group's first TI Faire a few years ago, and once you have met Peter you could never forget him. The Melbourne Group's new co-ordinator, Bill Murrell has sent a copy of a tribute to Peter, which appears later in our newsletter. On behalf of the Committee and members of the Hunter Valley Users Group I would ask Bill to pass on our sympathies to his wife and children.

## GIF MANIA

From the October issue of the Brisbane Users group newsletter comes this outline of a new picture file viewer from Texaments...

"Texaments have released a program called GIF Mania. This program will allow you to display GIF pictures on the TI99/4A. GIF (Graphics Interchange Format) is a standard format that was developed for one of the big bulletin boards in the US, CompuServe, I think. It allows images from all types of computers to be transferred from one to the other. Till now only the Geneve has been able to display these pictures. There are over 100,000 GIF pictures available, mostly freeware."

"GIF Mania gives you control over how the images appear, including colour (intensity, deviation, greyscale and monochrome), black line mode to remove boarders, condensed mode to allow images that are larger than the screen to be displayed in total, and shift mode to allow you to move around high resolution pictures. It will also save the images in TI-Artist format so that they can be printed. It also has full drive cataloguing facilities and supports hard drives. It can be run on the Geneve in GPL mode but the advanced graphics capabilities will not be used (the GIF program for the Geneve has been available for several years)."

"GIF Mania requires 32K memory and a disk drive and costs $US14.95 + $US8.00 air mail. Contact Texaments, 53 Center St, Patchogue NY 11772, USA."

## SOFTWARE - WHERE IS IT?

Tom Arnold, writing in the November issue of TI-Focus, the newsletter of the Ontario Users Group makes this interesting comment...

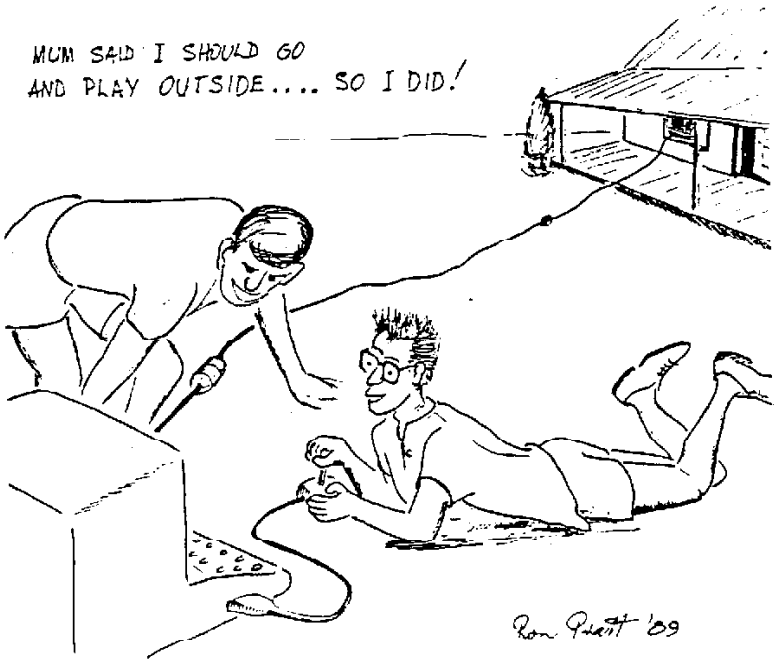
McCann Software has a new address: 4411 North 93rd Street, Omaha NE68134 USA. McCann is no longer producing software for the TI and Geneve but they

continue to sell their current software: Business Graphs, The Printers Apprentice, TPA Toolbox, Geometers Apprentice and TPA for MDOS. As I read through MICROpendium, little hints such as this that YOU (that's right, YOU) have stopped buying software. When you first got your machine how much did you pay for game cartridges? If you spent the same on current software we would be flooded with new releases. This is one thing I can't understand. I know several people who have bought IBM clones recently, and what do they do? Go out and spend a fortune on software, yet they wouldn't spend 5 cents on TI software. No wonder their machines perform better. The idea of a computer hobby is to always have something new to explore. If not, we would have been satisfied with the software and hardware we had 8 years ago.

## THAT'S IT FOLKS

Well, that's it for another year. It has been an interesting year for the TI community, with some slackening off in the pace of software received, articles written etc, but the biggest events of the year (for me anyway) were the visit by Bob Carmany to the Hunter Valley (I'm only just getting over it now!), and the mailing (finally!) of the QUEST RAMdisks - it was a long process, but in the end we were able to satisfy orders from around the world. Thanks to those who assisted in the ordering of parts, the assembly and testing of the cards. I am sure that those who purchased them will get as much pleasure from them as the originator of the demand - Bob Carmany, writing in an article in MICROpendium - thanks Bob (I think!!).

I will take this opportunity to wish all our members and readers all the best for Christmas and the New Year, and look forward to another interesting year for the TI.



# COMPUTING - THE FUTURE?

This article was written by Garry Christensen, and appeared in the November issue of BUG-BITES, the newsletter of the Brisbane Users Group.

No discussion about home and personal computers would be possible without introducing the Big Blue, IBM. When the TI was pressing the standard of the home computer upward, IBM decided to get in on the small computer with one that they called a personal computer. I personally do not know a lot about these machines and to be honest, I'm not that interested but it really came down to a battle between the Home Computer and the Personal Computer. This battle was fought, not on the ability of the computer but in the marketplace. It perhaps is history now who won that battle.

The majority of the home computers did not make it. The only remaining ones are the MacIntosh and the Amiga. Once the marketing had thinned the market out a little the companies could start concentrating on who had the best machine and making sure that it was theirs. The drive for computing power and performance was on.

It took only a couple of years for IBM to progress from the 8088 processor to the faster 80286, then another short period to the release of the 80386 and recently the 80486. Each are faster than its predecessor and have greater capabilities. Today it has reached the stage that a laptop computer with an 80486 processor has more memory and is faster than the big mainframes of a decade ago. It also raises the point - Who needs that much power in their lap?

A PC with an 80286 will do everything that the normal person or business will ever need. Let's face it, the TI will do just about everything that the average householder will ever need. Take an 80386 to link the 80286 computers together and you have a network that will run a large business, even one that is spread throughout Australia. The 80486 is great if you are working with enormous amounts of data, say in graphics manipulation, or where high speed data processing is necessary.

To my way of thinking we have approached the end of the track. Computer response times have greatly exceeded the human need. Who cares if you have to wait 1/100th of a second for the computer to find the data, assess the users requirements and respond accordingly? I'll save the money and use the old one that takes 1/25th of a second. Could you tell the difference?

Sure there are needs for better systems but there is no longer the bulk market. Specialized needs and big dollars - would you spend $15000 on an 80486 based computer when a $3000 80286 will do the job? I believe that the areas of development will be in memory, data storage and peripherals.

Memory first. The amount of data that can be stored on one chip is increasing all the time. Will we soon see a chip that can hold a 1 megabyte? How about 4, or 16? I think that it is only a matter of time. The other area of development is non-volatile memory. Chips that do not lose the contents when the power is disconnected are available, but the systems are not completely satisfactory. Eproms have to be burnt and Eproms need special circuitry. Commercial development of non-volatile memory is not far away.

How about data storage? Floppy drives give up to 1.4 meg storage. Higher densities may become available but there is a limit inherent in the media used to store the data. Magnetic imprints can only be so close together without effecting each other. Laser seems to be the way. CD players already cost less than a hard drive. CD-ROMs are already used to store bulk information. Soon the process of writing as well as reading will be perfected and these units will become available. On a dollars-per-megabyte basis the hard drives will not be able to compete. Some manufacturers are already talking in gigabytes (1 gigabyte=1000 megabytes=3000 DSDD disks). The time to find data on the laser disk will also be very small, no heads to move - just a beam of light!

The other area of improvement is in printers. It's great to be able to put the information into the computer but it still has to be retrieved. There are a couple of areas of work in printers. The dot matrix has improved with the 24 pin head. This gives high quality printing without much cost. The next step up is the ink jet printer. This printer shoots a small droplet of ink onto the page instead of using a pin and ribbon. They have up to 48 nozzles on the head. The final type is the laser printer. These use a laser beam to create an image on what is essentially a photocopier. These are fast and have high resolution, although the ink jet printers can give them a good run for their money in the resolution stakes.

In all of these types of printers we will see the price continue to fall. I don't know where it will stop, but I believe that a laser printer will be within the reach of most computer buyers in the near future. An added feature will be colour. The dot matrix printer will lead the way here because of the ease of manufacturing colour ribbons. In fact, there are already quite a number of good colour printers available. The colour ink jet printers will come soon and may have the ability to create more colours than the dot matrix variety. The dot matrix are presently limited to 7 colours, although this may improve in the future. By mixing coloured

ink, the ink jet printers may be able to generate an enormous variety of colours. The top range will be the colour laser printers. Anyone who has seen a colour copier in action will understand what is possible, but it will be quite a while before the price comes down to a point where the individual can afford it.

Where does all this leave the TI? The bit about printers is obvious. As each new improvement is made, the software will be upgraded to support it. TI_Artist Plus already supports colour printers. As the hard disk technology improves, the cost will fall. Hard drives will shortly be available to more and more TI'ers. The only problem here is the cost of the controller, but perhaps someone will do something about that too.

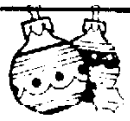
We can already put memory expansion on a single chip so, as the memory becomes cheaper, we may see true 512K memory expansion for the TI. This will of course include the development of the software to make use of the extra memory so we could expect some fantastic programs. All of TI-A+ could be loaded at once and the images could be much larger than the screen - perhaps a full page of high resolution picture.

The extra memory also opens the way for other devices. How about video image digitizers? Hook that to a fax board for sending and receiving faxes.

Better memory technology means better chips of other types as well. Perhaps new video chips. The 9958 seems promising but not really applicable to the TI computer. There is a lot of room for work here.

Well, there are a few of my ideas. Some may be right, most probably wrong, but I know that I am looking forward to the future with my TI/9640 and one day I will be able to read this to see how far out I was.

What are your thoughts? What do you think will happen in the future? What do you hope will happen? Why not let us all know and if enough speak out, we may even get what we want!



# RANDOM BYTES

By Bob Carmany

There has (or was) a series in **MICROpendium** entitled "Expanding your TI" that ran for several issues. It was a comprehensive series that dealt with what was available to expand the TI from the basic console/TV/taperecorder to whatever you wanted. I thought that it might be interesting to take a look at a system and the rationale for putting it together in the particular configuration in which it exists. The system, incidently, is mine --a far cry now from the stand-a-lones that I had even a year or so
ago!!

Let's start with the console and the minor attachments. The console that I'm currently using is one of the beige non-Vn 2.2 models. These were made for a short while and the major improvement is the cooler running power supply. The only feature that I don't like is the absence of an LED to tell me whether the bloody thing is off or on. I've learned to live with that, though.

Of course, there are a couple of extra black and silver consoles tucked neatly away in case of failure. TI will still exchange abroken console but I would hate to be down for several weeks waiting for a replacement.

There are a pair of PRO-STICK joysticks attached to the console for applications that require the use of a joystick. They have excellent response and, most important, a five-year warranty! I managed to purchase a few replacement parts for them a couple years back as well. Nothing major, just a few extra contacts and an extra spring or so. These are just in case of a minor breakdown and they are the parts that are the most likely to fail. Replacement is fast and easy!

One of those "widgets" is stuck into the cartridge port. It allows for the quick change of cartridges without wearing out the port itself.Over the years, I've found it to be a great time saver as well.

A Speech Synthesizer is attached to the expansion port to take advantage of programs with speech capability and for general experimentation along those lines as well.

One extra that I would like isa card to put the Speech Synthesizer "guts" into the P-Box and out of sightand out of the way. Probably one of the $50 ones from RAVE is all that I need.

Now, to the P-Box!

First comes the RS232/PIO card. Mine is the standard TI-produced model and does the job quite nicely. My attached printer is a STAR NX-1000 which I find quite adequate for my purposes. It has full graphics capability, NLQ, and reasonable speed in draft mode.Besides, it is EPSON-compatible meaning that it uses the same basic commands as an EPSON and most of the programs need no alteration to use them. It also has an IBM mode that enables the use of the IBM graphics sets, etc. There are some more exotic features but suffice it to say that it does about anything I want it to do.

Also attached to the RS232 is an Avatex 1200-E modem. At 1200 baud,it is about the best combination of speed and readability available. Above1200 baud line noise can cause problems. Below 1200 baud the transmission speed is just too slow. For our local free BBS, 1200 baud works quite well and it even is good for the odd long-distance toll call to a BBS.

There are two DSSD Panasonic half-height disk drives in the P-Box as well. Why not DSDD? Well, most TIers are still single density and I really don't need the extra storage space on a per disk basis.

The disk controller is a TI card. I still consider it the easiest to use and there isn't a controversy as with the Myarc controller with the strange number of tracks in double-density mode. I have a spare TI controller card tucked away as well in case of failure. Frankly, the drives get less work now that these next two beauties have been installed.

Two 512K Quests are also in the P-Box with the 17th chip in the first one taking the place of the normal 32K card (there is a spare TI 32K card just in case . .). When I brought the first one home from Oz months ago, it quickly got filled up to capacity with programs. So, I did the only logical thing and acquired a second. Now, my most-used programs reside on RAMdisk. Mainly that consists of F'WEB and all of its options as well as a few choice extras from the AUTO program menu.

The Quests are partitioned as:

Quest #1 - DSK4 and DSK5,
Quest #2 - DSK6 and DSK7.

The last 1100 sectors in the second Quest function as workspace. I use it primarily for temporary text file storage, BBS downloads and uploads, and for the assembly of A/L source code.

If I anticipate using one of the "lesser" programs for a day or two, (like TI-ARTIST PLUS or MULTIPLAN, I load them into this area and run them from there until I'm finished and then erase the lot when I'm through.

Also the "bucket of Ron Eprommers. It insurance and DSR

Also available for the "bucket of bolts" is one of Ron Kleinschafer's Eprommers. It is primary insurance against GROM and DSR failure

available for bolts" is one of Kleinschafer's is primary against GROM failure. Having the ability to program replacements for various DSRs and GROM chips makes a TI console just about immortal! I also use it for the odd bit of experimentation as well. A Christmas present several years ago, the QED 32K cartridge occupies one of the slots in the "widget".

I still have F'WEB installed in it most of the time but it is most often used with the eprommer or for the E/A loader capabilities that it has in it.

That's the system that I have been using for the past six months sincel finally got all of the pieces assembled. Where would I expand from here? Probably the first thing that I would consider is the RAVE card for the Speech Synthesizer. Next would be the AVPC Card and appropriate monitor. I must admit that seeing Tony's F'WEB in 80-columns is a serious temptation to buy both.

Right now, though, its a simple matter of money. That would be as far as I would like to go with my system.

Why not a Myarc HFDC? I'm afraid that the reliability of this device is questionable as is its performance. Most of the users here in theStates have had significant problems with it going out to lunch and there are other problems as well. I can't figure out what to do with 20 Megs of hard drive space, anyway. Why have your entire library on one hard drive when you aren't going to use most of the programs anyway? It seems to me to just be something to show off to your mates. It's nice to show off but the practicality of having a hard drive escapes me. This is particularly true when you have a couple of RAM disks in your system.

Would I like to have a Geneve? Not really! The software hasn't been tabilized for it yet and it has been on the market for a couple of years.There are so many updates floating around that it is difficult to decipher which one to use with which program. It like the rest of Myarc's products it seems to have some engineering problems. Like the HFDC, the Geneve seems to break down frequently and the

software for it is scant and unimpressive.

It seems that my system has come a "light-year" since those days 5 years or so ago when I had a console, TV, and a cassette tape deck and thought that it was the best thing going! Quite frankly, I use one of those IBM PS/2's at work and I'm not sure that my TI isn't better for most applications than the IBM is. At least I'm more comfortable with it and don't fore see any changes at all. As long as I have the capability to repair and replace what I have, there is NO reason to invest several thousand dollars in something that is marginally better in some applications.

# FAR OUT (IN THE BUSH).

by Dick Schaydel.

Just had a bonzer idea for my pig-breeding experiment. The last market shipment opened up some space in the pig-pens so I have decided to try cross breeding (ED.. steady on there readers the next few words are most important) domestic stock with wild pigs.

It would be interesting to see what would happen if the disease resistance of feral pigs could be incorporated into domestic stock. The biggest problem is getting wild stock--- you can't just walk up to a wild boar and ask him to politely step into the pig-pen. I have developed a plan.

I reckon that it would go easier if I trapped a couple of sows first and then I could use them to attract a boar. For the last couple of days I have been putting up fencing in the "never-never" trying to get a trap together.

The whole thing is shaped like a funnel ---- like you drink beer with, mate. A pile of smelly offal is at the end of the neck hoping to attract the pigs into the fenced area where they will be trapped by a sliding gate that is tripped after entry.

I've been at it for a week now without any luck.. just sow, no decent boars, another fortnight and I'll call it quits.

I ran across a couple more programs that might be of interest while I was digging through my library.

RAG LINKER and PROGRAM CONVERTER are two that do exactly the same thing. They take DF80 object code files and turn them into program image files. They are slightly different and one or the other will handle just about any object code file. The big advantage to converting these programs is that they load faster as program image and also takes up less disk space.

Linker comes with a complete set of instructions and a bit of reading will tell you how it operates. After you have read the documentation with LINKER. you should have an idea of how PROGRAM CONVERTER works.

There weren't any doc files with the copy I have in my library.

A pile of smelly offal is at the end of the neck hoping to attract the pigs into the fenced area

Another program from the same bloke (Rag Software) is an update version of ////wait for it//// TI WRITER. The major improvement includes a general increase in speed in all functions in the editor, a new command "QQ" now allows one to leave the program with a second key-press. There are some other minor changes but most of the work went into the formatter.

PC sends a series of print-commands to the printer and can be used as a printer set-up.

DU allows you to redefine the underline character to something other than the

ampersand.

DB allows for the redefinition of the double strike character to other that the "@" sign.

DM is for changing or defining the mail-list character.

DR defines the required space character.

AI is similar to the NF command except that the left margin is still observed.

CP is the conditional eject code. (ED the mind boggles on that one.. whoosh) and will generate a page-break if there are less than a certain number of lines left on the page.

A beaut idea for emulating those two or three line paragraphs at the end of a page. You can even use the flamin' thing with the latest version of funnelweb by that McGOVERN bloke!!!.

***I did it!!!!!!!*** While I was writing this, a neighbour called on the CB to tell me there was a boar in the trap, and what a pig. A large razor-back boar , a real monster. He goes 150 kg at least!!

He did a good job of bashing-up the gate and fence before I could get out there. Getting the flamin pig out was the hard-part.. You can't just grab him by the ear and walk him out, you know! The best way is to get a loop over a leg and then snig him up to either a gate or a fence-post then lash other legs so he can't move and falls over. A big piece of canvas is then used to drag him into a weld-mesh covered trailer and then he is taken to the pig-pen.

You can't be too careful. These razor-backs have sharp tusks and they will rip a person open like a tin of beans in just the blink of an eye. Anyway I got him back to the holding pen that I made out of more welded steel and when he calms down a bit, I'll move him into something a bit more spacious.

I think this is the same razor-back that has been sniffing about the place and busting-up some fences. Now, all I have to do is re-set the trap and see how many more I can catch for wild pig cross-breeding experiments.

## NIBBLEBYTES

Al Lawrence

A STORY...

I enjoyed reading in the June '90 issue of the E.A.R.99'ers.

Author unknown.

It was a dark and stormy night.....

A ragged old man emerged from the shadows and walked into the light.

"stupid place to put a street light" he muttered, as, wrapping his shabby threadbare overcoat more tightly around his bony, half body, he lurched off down the street, his gnarled old hands clutching a small square package.

Presently, the old man entered the dingy hallway of a block of flats, and climbing asthmatically to the top floor he produced a key and let himself into a dismal bedsit, Lit only by a single naked light bulb.

Placing the package carefully on the small bare table, he removed his overcoat and fingerless gloves, His arthitic old fingers tore open the wrapping to reveal ten small black plastic squares. "At Last," he croaked, his tired old face lighting up in a smile,

"It's here FUNNELWEB Version 25.0."

Well it may never get as extreme as that but FUNNELWEB 4.31 has now

arrived and for those of us without an 80 col. card Tony has enhanced the 40 col. version of Disk Review so it now is almost as powerfull as its big brother.

As well as the major surgery on the Disk Review there are now more improvments on files ED/EE, LDFW, CT8K/0, FW, LOAD and the doc's have all been updated and should be read for the new features.

Was it worth waiting for and changing to?

" YES " as it incorporates a lot of the feedback suggestions on almost every thing excepting A to Z drive recognition.

Look no more it's there.

The TI Community lost a dedicated TI'er with the passing of Peter Gleed from the Melbourne User Group and we will all miss his quips and jibes, as well as the input to the TI groups in general. A pity Richard Terry and I never got the DIJI cards that we ordered from Peter in '89.

From the HV99'ers and myself our sympthy to the families he leaves behind.

Myarc HDFC as " inhabits " the farm does not behave as a good disk controller is supposed to behave, no doubt Tony will have more to say later on the subject.

Hopefully 1991 being a viki virki year will be kind to user groups.

Merry Christmas and a Black Velvet New Year to ONE and ALL.!!!

PS. If you have any Black Velvet left over from last year shame on you.!!!

Keep on TI'ing.

# RANDOM BYTES

By Bob Carmany

Time for another column! It's always a challenge to write one of these columns. Trying to come up with something unique for each of them leads to some serious head-scratching.

In my quest (pun intended) for 62256 chips, I managed to acquire acouple of electronics catalogs. See if you can get one from Dick Smith's or some other local place and just take a day or two looking through it.One of the more interesting items that I cam across were rechargable Ni-Cad batteries with solder tabs already attached to them. They were even available in the correct size to replace the ones in my RAM disks. Insteadof soldering the batteries directly to the contacts which can be a bit hazardous, the solder tabs make it easy.

Something to consider when my batteries finally quit. Tandy (Radio Shack) has some interesting stuff in its catalogs as well. They also have a reputation for reliability and most of their stuff is priced moderately as well. Sit down with a Tooheys and one of the catalogs and just look through the pages. You might find something that you can use for your system.

Sit down with a Tooheys and one of the catalogs and just look through the pages.

I've been working of late with an Eprommer. With an appropriate bribe (actually a commission), Ron K put one together for me and sent it along through the mail. It was complete except for the transformer. After some investigation and waiting for a 15 VAC CT transformer, the final touches were put on it and off it went!

Ever since, I've been dabbling in A/L and trying to come up with some workable eproms of various interests. My success has been mixed at best. At least I can see some progress from time to time in my A/L programming efforts and also have a valid reason to continue the pursuit. As a result of Ron's "pressie", you can

probably look forward to some future articles dealing with A/L, eproms, and other musings.

Oh yes, I have indices (plural of index) of 99ER/HCM magazine, MICROpendium, and the HV99 newsletter in D/V 80 format. They are all complete from the first issue of each and I'll even send along CMINDEX with them for those who are interested. There should be a copy in the UG library or if you will send along a couple of blank disks and postage I'll mail out a copy to you.

My address is: Robert Carmany, 1504 Larson St.,Greensboro NC 27407, USA.

Ok, now it's time to get up on the "soapbox" and add my voice to some of the rest of the UG members. I feel fortunate to get a copy of the newsletter on a monthly basis --until recently, that is! It seems thatHunter Valley is afflicted with the same malady that afflicts most Users Groups from time to time. What is that you ask? Apathy!! Bi-monthly newsletters are not acceptable, mates! But a newsletter can't be printed if nobody writes articles for it. Half an hour spent in front of the TI writing an article about just about anything remotely related to the TI will help out. Program reviews, non-technical articles, or just ramblings about what you do with your TI are acceptable. Please, support the UG by writing something for the newsletter --- even if its a hand-written scrawl! Another 'full buffer' message and I am behind schedule in mailing this lot off to our intrepid editor.

Suggestions for future topics in this series are welcome.

'Til next time!

## MAGAZINES

Well here we are at the end of another year and the magazine library is still getting bigger.so much so that as I said in an earlier magazine that most of the magazines are stored at my works.( the ambulance station main roadboolaroo.)

The advantage of this is that if I am not at home somebody is usually at the station. the magazines are stored in the hall at the back of the station.

The books on different TI related things are stored at my home.

Has anybody seen the cable for the club's printer? as I have the printer but no cable.

Thanks for all the help during the year with the magazines.

Wishing you a merry christmas and a happy new year and see you all next year.

Ken Lynch

## AN ENHANCED KSCAN ROUTINE

Tony McGovern

The TI-99/4a system uses the TMS 9900 CPU to sense the keyboard switch contacts via the TMS 9901 interface and the CRU bus to set and sense various keyboard lines, A fairly complex routine is used to decode the results and return keycodes in one of several keyboard mappings. System specifications are that this routine may be entered by a BL instruction to the standard address SCAN = >000E in the console ROM while in the GPL workspace at GPLWS = >83E0. This then handles all the details and returns the keycode as a byte at >8375, with the special code >FF if no key was found pressed. If the same key remains pressed as at the last

call to SCAN, the the GPL status byte at >837C has bit 2 set, the GPL condition bit. Sometimes in the interests of speed some games programs do their own direct CRU scan to get limited information fast. This is living dangerously because not all console models are the same at this level.

There is a certain amount of overhead that the assembly programmer must provide in order to call the console SCAN routine. Before entry the GPL workspace must be set and the current workspace restored on exit. As a further detail the existing contents of R11 in the GPL workspace will usually need to be saved and restored. The standard E/A utilities or XB INIT utilities encapsulate all this in a BLWP routine normally referred to as KSCAN. After a BLWP at KSCAN the programmer still needs to sort out the details returned in the same fashion as before. This article is about a value-added version of KSCAN that makes the disentangling much easier, but which at the simplest level can be used in exactly the same way as the standard KSCAN.

Normally the BLWP instruction saves the CPU status register and it is restored on return via the RTWP instruction. It does this by storing the status register contents in R15 of the BLWP workspace and RTWP restores it from there. This leaves open the possibility for the BLWP routine to pass information back to the calling program by manipulating R15 and having it appear on return in the CPU status register where it tested by a conditional Jump instruction. This is a particularly transparent way of passing information as it uses no registers or memory locations. The only possibility of interference is with the CPU status, and I have not yet seen an example of TMS 9900 coding which relies on CPU status being completely preserved across a BLWP call. In any event this is under the programmer's control.

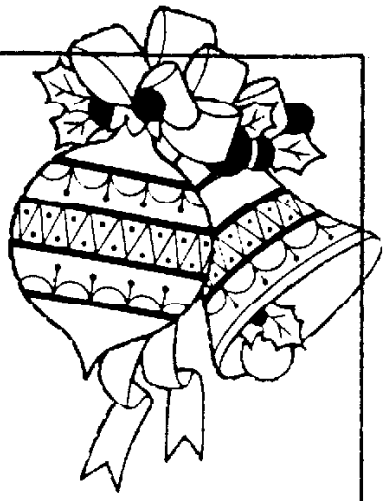
There is a certain amount of overhead that the assembly programmer must provide in order to call the console SCAN routine.

The KSCANF routine that follows exploits this principle to the full. There are 6 bits in the status register that are tested in various combinations by Jump instructions.

< L>, A>, EQ, C, OV, OP, ..... Int mask >

These are Logical Greater Than, Arithmetic Greater Than, Equals, Overflow, and Odd Parity. The TMS 9900 does not have a full complement of tests on these but with a little ingenuity 6 independent tests may be set up. This is done in the code for KSCANF that follows. The routine uses only R12 - R15 so that its workspace may be partially overlapped with code or other workspaces as desired. The routine starts by resetting with an ANDI all the status bits in the caller's status word as stored in R15. This gives a clean sheet for working on. The code following is just the standard KSCAN detail. To save code space the key return at >8375 is transferred to R12. The first test is for <No Key> and if this is the case the Odd Parity bit is set. We could jump to the exit at this point with that bit set but this would take an extra instruction, and subsequent tests are failed automatically. The extra time taken is of little account as the console routine is already very long, with much timewasting in debounce loops.

You can then follow through the code and see how the various bits are set or left reset to flag other conditions. The choices shown are as used in Funnelweb Vn 4.31 (but not earlier versions) where a similar routine is now a part of the main program, with BLWP vector at >FFD0 so that it is available to utility programs loaded by Funnelweb. Alternatively the whole routine could be incorporated into program code with whatever variations are desired.

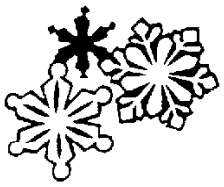


```
* Key Routine with multifunction sensing
*--------------------------------------
* Call as BLWP @KSCANF
*       JNC -->>  <escape> --> Jump
*       JOP -->>  <No Key> --> Jump
*       JNO -->>  <Proc'd> --> Jump
*       JEQ -->>  <OldKey> --> Jump
*       JGT -->>  <Enter> --> Jump
*       JH  -->>  <Redo>  --> Jump  (New key only)

KSCANF DATA KSWSP,KSCN00
KSCN00 EQU  $
       ANDI  R15,>03FF          Clear all status bits
       MOV   @GPLWS+22,R12      Preserve GPL return address
       LWPI  GPLWS              Set GPL workspace
       BL    @SCAN              Console key routine
       LWPI  KSWSP              Restore KSCAN workspace
       MOV   R12,@GPLWS+22      Restore GPL return
       CLR   R12                Allow for CI instructions
       MOVB  @>8375,R12         Fetch key return
       CI    R12,>FF00          Check if any key pressed
       JNE   KSCN10             Yes - something
       ORI   R15,>0400          Set <OP> bit to show <No Key>
KSCN10 CI    R12,>0C00          Check for <PROC'D> key
       JEQ   KSCN20             Yes - set bit
       CI    R12,>8100          <Ctrl-A> ?
       JEQ   KSCN20             Yes
KSCN15 ORI   R15,>0800          <OV> if NOT(<ctl-A> or <Prc'd>)
KSCN20 CI    R12,>0F00          Is it <fn-9> ?
       JEQ   KSCN30             <escape> exit then
       CI    R12,>8300          Is it <ctrl-C> ?
       JEQ   KSCN30             Take <escape> exit
       ORI   R15,>1000          <CARRY> bit to show no <escape>
KSCN30 CI    R12,>0D00          <enter> key ?
       JNE   KSCN40             No
       ORI   R15,>4000          Set <ARITH> to show <enter> key
KSCN40 CI    R12,>0600          <Redo fn-8> ?
       JNE   KSCN50             No
       ORI   R15,>8000          Set <LGT> for <Redo>
KSCN50 MOVB  @>837C,R12         Fetch GPL status byte
       SLA   R12,3              Check condition bit
       JOC   KSCNEX             New key pressed
       ORI   R15,>2000          Set <EQ> for <Old Key>
KSCNEX RTWP
       DATA  >0                 R12
       DATA  >0,>0,>0           R13 - R15 OF KSWSP
KSWSP  EQU   $->20
```

Whether or not you choose to test the CPU status directly on return, the raw key value is still available at >8375. I will now leave it to your ingenuity to devise various applications for this routine. It is particularly useful in large highly interactive programs such as DiskReview, where in fact it was first developed.

If you want to try it as above just EQUate KSCANF to >FFD0 and load your code from Funnelweb Vn 4.31 or later.



# RANDOM BYTES

By Bob Carmany

I think that I mentioned in the last column that I had been tinkering with an Eprommer that I bought from Ron Kleinschafer. Well, I have finally reached the point where I can burn an eprom without any problems. It appears that the problem was a bad batch of chips rather than any failing in the hardware or softare itself. That was a relief!

Since I got the Eprommer (hereafter called 'Ep'), there have been some adjustments and improvements to the software. Ron, it seems, must have been taught A/L programming by Tony McGovern. The updates come out a adizzying rate! I started off with Vn 3.5 a couple of months ago and now I'm using Vn 4.0! Truthfully, I like to see a program that the author takes enough pride in to upgrade as he thinks of improvements. Ron must be extremely proud of Ep!

To be honest, an eprommer is not a hardware addition for everyone. I would, however recommend that if you have a serious interest in your TI that you at least have access to one.

Why?

There are a couple of good reasons. First, there is system security. There are only a couple of unique chips in the TI console and probably only a single chip in each of the TI P-Box cards. In the console, the GROM chips are unique and the various DSR chips in the cards are unique. Everything elses (including theTMS9918A) can be bought at a local electronics supply store or from amail-order catalog. If one of the unique chips fails, it is a long and sometimes costly effort to get the offending component fixed --- unless you have an Ep.

The various DSR chips have been saved as files and the GROM chips can be copied as well and save to disk. So, when your disk controller DSR fails you can pop a TMS2532 (an exact replacement) into Ep and burn a newDSR replacement. The process takes about 7 minutes and costs about $6 for the chip. Not bad! F'WEB in a cartridge?

Or maybe ARCHIVER.

Or how about an A/L program that you have written yourself? It isn't out of the question! The process isn't all that complicated.

Ron's software takes care of loading the files into memory. A GPL header and some HEX arithmetic and you are on your way to having a customized eprom cartridge. Admittedly, it wasn't THAT easy. My first attempts were not entirely successful (a euphemism for unqualified disaster). It wasn't long, however, before I got the sense of the process and turned out my first eprommed version of Quest.

All of the files can be saved to disk and re-used for the future --just like the eproms themselves.

An eprom chip is an (E)rasable, (P)rogrammable, ROM chip. Hence the name EPROM. When you are tired of the application or want to re-use the chip for something else, stick it under a bit of ultraviolet light and it is erased. The TMS2532 can be used for GROM and DSR replacement and the 2764 for 8K cartridge applications. A few of each and you are ready to replace or create anything.

Using Ep has given new impetus to my A/L machinations. It sure would be nice to have a utility of some sort burned into an eprom that I could use just like one of the TI cartridges. Now all I have to do is come up with an idea for a project!

Besides all of the creative fun that you can have with an Ep, it will make your trusty TI just about immortal!

Oh well, I'm getting another "buffer full" message. So I had better pack this up and get it ready to mail out to our editor.

'Til next issue . . .

# Beating Around The Bush.

by Don Kleinschafer

What's been going on up in the bush mate? Well although you may have noticed that there hasn't been much input from me to the newsletter as has been the habit in the past, I have been kept very busy on the old bucket of bolts.

I would say without a doubt, the most time-consuming past time this year would have to be programming in assembly, actually learning is more the word, as much as any programmer would like to think that all problems (known as bugs) have been overcome in any work, all one has to do is send it to someone for use, sit back with a self satisfied smile and sure as hell, in no time at all, a letter will come back with an over-looked problem, be it big or small, Murphy will strike.

During the year, the QUEST ram-disk has kept this black duck very busy, not only because of reports, or requests from other users, but one's own need to see if it can be done just that little bit better.

Experimentation is a great teaching experience and it has been known, in this neck of the woods, that this system has been totally locked up to the point where the only fix is to get the screwdriver out and "kill" everything, so much so that there is now installed on each ram-disk a DSR-KILLER. This is a small "push-button" that has been fitted to the ram-disks (with modifications).

> A blow for those who dabble in the DIAL-UP-DATA-JUNGLE this year, was Telecom's decision to increase the subscription to DISCOVERY

This addition only requires lifting the lid on the PE box and pressing the button for a few seconds.

This adaption "KILLS" the DSR ram, and all that is then required. is to set about reloading the dsr's to the appropriate ram-disk. Most of the time this has been useful in preserving all the files on the ram-disk, I say most of the time because I have even managed to wreck some of those files. Its really easy when you go about things the wrong way!

If you think that something YOU do with the TI is only MINOR, but think that letting others know about it in this newsletter is only helping to fill the pages , then think again, mate!

One of the surprises to me, to come out of an article concerning the design for an EPROMMER published about two years ago in this newsletter, is the fact that a lot

of correspondence is still circulating concerning that article.

When I decided to update the software for that device, it originally for my own benefit. (Eproms are not just used in computers).

My initial thoughts were that it would be something that would attract a very limited number of users, and the whole article would only be of academic interest. Guess again Ronny.

Queries about that device have been much greater than ever anticipated, so much so that a large part of this year has been spent in up-dating the software for it. Because of the intricacies of programming Eproms, most correspondence has been more direct than by the usual UG channels.

I suppose that the bottom liner is that if you have something and you feel that it is insignificant, don't keep it to yourself, it may be just what others want, but don't know how to go about it.

Haven't seen much of that other "bushy" Dick, although I get hand-scribbled (why does he do that?) articles fairly often, I must say that the articles do take a deal of editing. The biggest problem is finding enough substitute words for the ones I beep out (four letter variety), and generally trying to create "G" rated type material that flows from the "pen of no boundaries".

Apart from that I suppose he is kept busy doing what most of the rest of us are doing, and that is keeping bread on the table, although I have heard, through the bush telegraph, that he has been his usual self, up to tricks with city-siders, urging them on in a hunt for (of all thing) BUNYIPS ..... just can't help himself that bloke!!!!

I suppose I can expect repercussions after these few revelations. (ED Note.. If Dick stops writing for us Ron watch out... We still luv ya Dick)

This time of the year is rather dramatic. If one takes time to look, a whole lot of NATURE is happening out there. Here in the sticks, those pretty flowers which appeared during the year are now some of the nastiest burrs you could ask for. One of them is called the "BOGAN FLEA". This delightful, delicate little blue flower turns into an innocent little brown ball. The wonderful thing about those little brown balls is that they love socks and shoe-laces.

The decision causes one to wonder if the system has become more useful to the financial and business sector

Once they stick-on, much thought has to be given to their removal, as just one touch and they explode into literally thousands of even smaller burrs which stick on even harder. If anyone has the wish to experiment with one (good for getting rid of the socks that "ma-in-law" gave you) just send a stamped, self-addressed and one will be dispatched promptly (no probs with bulk orders.).

One for basic/xbasic programmers...

In most of the RTA's (Road Traffic Authority) offices, now sits a computer to test prospective drivers' knowledge of road rule. Very simply it selects a series of questions about the rules of the road and scores the poor applicant on their knowledge. (If you want to see one in action, drop into your local RTA office and have a look.)

If anyone wants a challenge try this....it may be useful too.. Note there is no need for graphics and speed is certainly not a great criteria ... Any one want to try it..

A blow for those who dabble in the DIAL-UP-DATA-JUNGLE this year, was Telecom's decision to increase the subscription to DISCOVERY (formerly VIATEL) to $10.00 per month. This surely must reduce the number of subscribers, especially the random users.

The decision causes one to wonder if the system has become more useful to the

financial and business sector, making it no longer in need of support from the home user, or if the system has had reduced support from the public, in general, and the increased subscription fee is an attempt to prop-up the operations?

I and many others I have spoken too, have cancelled their subscription. Although I didn't use it a great deal, I did like to occasionally log-on and browse the many pages and perhaps pick up some specials on goods (Micro-ed offered many "Discovery specials" which were cheaper than other sources ) .

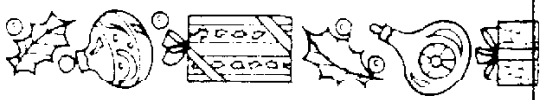
To "out of the way" users of computer equipment, it meant a reasonable-cost means of electronic mailing along with some services which had its attractions to country users, the most important being up-to-date weather reports.

It will be interesting to follow the fortunes of this service and see if any, or many service-providers bail out of this electronic media.

As usual at this time of the year, it is usual for the annual pilgrimage into the HV99ers' territory. Must get somewhere where I can go swimming, have a barby, laze around and generally do my bit to save the world..

RK.

# CHRISTMAS 1990



By Bob Carmany

This has been a very interesting year for me. The year started out with a trip to Oz.

After writing to you for years, I finally got to meet the lot of you. I only regret that I wasn't able to stay longer and see more of Oz. That gives me an excuse to make another trip, though, doesn't it? Next time, I'll bring my wife!

The same problems that affect the Hunter Valley Users Group seem to affect all of the UG's everywhere. Newsletter editors complain about the lack of material and the same old faces show up at every meeting. I don't really know if there is a solution to those problems but there is always hope for the future.

I have always been struck by a singular fact! A Users Group is more than a lot of blokes held together by a common computer interest. The camraderie that develops over the years of association often overshadows the computer interest. There are friendships that develop and endure far beyond the scope of a common interest. Hunter Valley can be proud of those relationships despite what may happen in the future.

I hope that the correspondence and kinship that has developed between myself and the UG members will last for years. In this time of year for "Peace on Earth and Goodwill toward men" when we have neither on a worldwide basis, gives me hope that at least between Newcastle and Greensboro there is a good measure of goodwill.

I have thoroughly enjoyed being associated with the Hunter Valley UG for the past several years.

From the Northern Hemisphere, "Merry Christmas to all and many happy returns for a prosperous New Year".

# LITTLE TEX

Tony McGovern

There is a new immigrant at Funnelweb Farm in late 1990, originally from Texas (Instruments). Looks like a little grey computer, speaks a dialect of Basic that sounds very like Extended Basic, and is known as Little Tex. What it said when it was first powered up was "COMPACT COMPUTER 40", usually abbreviated to CC-40. The date of manufacture on the back is 1983, the same year as the 99/4a

was discontinued. TI issued it as an official product in the US, but soon let it fade away. For a long while it seemed as mythical as the 99/2 which never was officially released (at least we had seen John Paine's specimen of that, even if not actually working). The original list price was $250 for a machine with 6K of memory. It seemed to sink from sight but it turns out that some dealers in the US still have new product, both computer and some accessories (L.L. Conner in Ohio sells them upgraded to 18K for $120), and TI recenlly slashed prices on a range of ROM cartridges, presumably to clear them out.

So what is Little Tex and what can it do ? In size it is 25 mm thick, and 235 mm by 150 mm ( ~ 9" x 6" x 1" for the un-metricated ). The color scheme is very muted in metallic and various shades of gray plastic. It has a single line LCD display which scrolls a 31 character window into 80 character lines. The keyboard has calculator type keys but in a QWERTY arrangement with a separate numeric keypad and extra control keys to the right side. There is only one Shift key. It is not a keyboard for the advanced typist, but on this size of keybaord two finger pecking is the way to go anyway. As calculator keys go they are quite good. Main complaint as compared to the 99/4a is that the brackets "()" are <shift> "89" instead of <shift> "90", the asterisk normally expected as <shift - 8> being over with the numeric keypad.

Though the TMS 7000 family comes in a wide variety of models, I don't think it has been the roaring success that TI would have wished.

ROM or RAM cartridges fit neatly under a cover at the upper right, and are physically much smaller than 99/4a cartridges. It runs on 4 AA alkaline cells which reputedly last for 200 - 250 hours of use, and much longer on standby. Turn it off and when you come back your program is still there. The original issue had 6 Kbytes of memory, but is upgradeable internally by the dealer to 18 Kbytes. The CPU is a CMOS 70C20, and not the familiar 9900 family. This was TI's attempt to upgrade its 4-bit controllers on one side and to replace the low end of the 9900 family on the other. Though the TMS 7000 family comes in a wide variety of models, I don't think it has been the roaring success that TI would have wished. Any 9900 series aficionado could tell them why.

Why did I get it? Well, the reason was that I wanted a small portable computer cum calculator programmable in Basic with a bias towards scientific and engineering calculations. I have a HP-15 programmable calculator with some quite powerful features, but I always find myself wishing for a good Basic when it comes to doing programs beyond the very simplest, but not extensive enough to fire up an AT with Turbo Pascal. Much more powerful portable or handheld computers are now available (so they should be 7 years after the CC-40 was made) but they are also far more expensive, and/or not programmable - the electronic notebook syndrome. For an old 99/4a diehard the great virtue of the CC-40 is that its Enhamced Basic is essentially similar to Extended Basic and retains its finest features, user-defined subprograms and validated Accept At. As it is in effect another pass at XB by TI's programmers, it is fascinating to look at the changes and developments.

First difference is that there just is not much scope for graphics on a one line LCD screen. CALL CHAR is still there but talks to only 7 characters in a 5x8 format. Various Greek and Japanese characters are permanently defined, and CALL KEY works as before, but a KEY$ function has been added for recording a single key-press, which helps coding considerably. No key-units or joysticks to worry about, but ACCEPT AT is there in all its old glory and more (no row coordinate of course) with new input validation options such as ALPHANUM. The only SOUND command is the miserable BEEP in ACCEPT AT. A PAUSE statement makes

calibrated delays easy. The Basic mathematics package is very similar to XB, with the same range of functions to the same accuracy, and using the same radix-100 floating point numbers. As with the 99/4a Basics there is no provision for integer variables. Execution speed does not seem all that different from the /4a either, despite there being no GROMs and GPL. The <function> key is in the numeric keypad and there is a key overlay that shows the Basic keyword entered by <fn (key)>. Main problem is that there is no way to clamp the overlay on to the keyboard and it tends to fall off unless it is flat on a desk. Keys <fn 1-9> can be set up as user defined strings as well. A change that is soon found welcome is that Basic lines (80 chars max) must be deleted explicitly - no more accidentally losing a line by typing its number and pressing <enter>.

There are a few new CALLs, INDIC for the LCD display markers, SETLANG for the messages (English and German in the CC-40 itself), PEEK and POKE for the obvious, and from the command line a CALL DEBUG which puts you into the Debug monitor, which given the display limitations is somewhere between EasyBug in Mini-Mem and the E/A Debug. Mainly this was meant to work with an E/A cartridge which appears never to have been released. Handling of assembly routines from Basic is nowhere near as sophisticated as on the 99/4q, more in the primitive class of the C-64 or Apple II. To engage an assembly routine CALL EXEC is used. It requires a numeric address pointer, but after that a parameter list as in the 99/4a's CALL LINK may follow.

The Basic sub-program facility uses the same CALL, SUB, SUBEND, SUBEXIT keywords that we know and love, with the same syntax for parameter lists to be called by value or by reference. An extra feature over XB is the ATTACH and RELEASE pair of keywords. Normally CC-40 subprograms are like Pascal procedures in that they are constructed each time for use and abandoned after use, but if one is ATTACHed it behaves like an XB subprogram with fully static variables preserved from one CALL to the next.

Various cartridges are available. The one I have is the Mathematics cartridge, which covers complex numbers, matrices and linear equations, integration, differential equations and so forth. These mathematics library functions are very nicely integrated with the Basic. They may be used directly as a separate library by RUN "xxx", with functions being entered by the user as Basic subprograms, or with prompts issued for numbers to be input, such as the coefficients of a set of linear equation. Alternatively the mathematical processes and the input prompting functions if needed may be CALLed from a Basic program. There are also Statistics, Financial and EE cartridges in similar vein. There is even supposed to be a Pascal cartridge, though I think Pascal would be a real horror on a single line display, and no doubt like the unreleased E/A cartridge also requires the unreleased Wafertape. Basic with line numbers would seem to be the language of choice on such a display. Some lessons seem to have been learned as the contacts on the cartridges are gold-plated, unlike the base metal contacts on 99/4a cartridges which are an unending source of annoyance.

All OLD, SAVE program functions and file system structure are to the familiar TI standard. This brings up the BIG question about the CC-40 - just what to SAVE to, or INPUT from etc etc ? Immediately, this is done via the HexBus, a low performance 4-bit parallel bus, with device numbers replacing the device names familiar on the 99/4a. What devices ? Well, according to Charlie Good in Ohio, you can still buy one of those little 4-pen printer/plotters that work on adding machine rolls, or even a very basic 80-column thermal (or one-time ribbon) printer for US$70 direct from TI in Texas in the final clearance. What is missing is a decent random access storage device. TI tried to make a WaferTape cartridge tape. Not really a

true random access device, and presumably better than an audio cassette, but TI never got this misbegotten thing to work to their product standards.

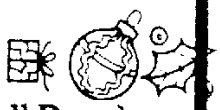
The CC-40 box has a picture of a WaferTape unit on the back, along with a sticker saying it is not available. Mechatronics in Germany made a sort of disk drive (the Quick Disk, which is still available at one dealer) using an electronic typewriter disk mechanism with a single spiral track. No honest disk drive has ever been available, though it would seem a natural application for a low power 3.5" drive. After all the C-64 showed that a proper disk drive was acceptable in the market even if the rate of data transfer was abominably slow. In retrospect I wonder if this contributed to the untimely demise of the 99/8.

This machine, though far more powerful than the 99/4a, was to use HexBus in its basic configuration if I recall correctly what I have read about it. I can see TI management at the time casting a very jaundiced eye on such a mismatched combination, especially if the storage device itself was not acceptable.

The one device that did work for input and output was the HexBus RS232, and with that you can communicate with other computers. Though no longer available from TI, there are still some of these in dealer stock.

Charlie now writes Lima BB&P newsletter articles on the CC-40 while away from home and loads them into TI-Writer via the RS232. I hope to be able to report in a future installment on the use of this and the Memo Processor cartridge as a poor man's portable computer.

# DISKREVIEW out of FUNNELWEB 4.31



Condensed notes by Al.Lawrence. ( Best read the full Docs )

DISKREVIEW (program files DR/DS 40 col and DR80/DR81 FOR 80 col Version) ) is a set of disk and file utilities that allow full disk management in the F'web environment. An enhanced Directory is featured, providing all file marking functions of the FUNNELWEB QD and a new file QF for the Formatter. A sector editor with string search and a wild card option. DR can be loaded as an alternate to the F'WEB main menu with access to the FUNNELWEB file loader system from the cursor bar in the directory display. With XB module it handles both Program and I/V254 file formats.

View mode gives bi-directional scrolling within a circular buffer of 8k byte size and printing out from the buffer of the Viewed file. It is fully compatible with 80 track disk systems, the Myarc HFDC Geneve 9640 with the 99/4a.

Screen colors and Print functions are defaults of F'WEB as installed for use by the Editor functions in the main program. From View option,all or marked parts of Display files of any record length may be printed, with original record lengths preserved.

DISKREVIEW initial screen contains an information block, command reminders, and window for alternative menus or directory paging. A pop-out window in the lower center of the screen is used for user input, progress reports, and error messages. Any unit number entered in the form DSKx., the character "x" must be in the range 1-9. When a disk directory is read, program file checking is done automatically.

Disk/file information block shows the usual disk and drive details.

WF :- the current FUNNELWEB workfile DV/80 or DF/80 display file as would come up for Editor LF/SF etc.

OF :- the current FUNNELWEB DF/80 object filename as appears as default.

PF :- the current FUNNELWEB assembly program file name appears as

default.

Entering DISKREVIEW Current filenames are read and displayed, and on exit the names showing are installed as defaults for FUNNELWEB.

KEY FUNCTIONS----------

When DR first loads, the left side key advice panel shows a number of alternatives. This screen is also reached by <enter> or <escape> from the directory screen (<escape> is either <fctn-9> or <ctrl-C> throughout DR). All key entries are automatically converted to upper case except where lower case might be needed as in ASCII search string entry.

<1-9> keys. The directory is read from the disk in selected drive and displayed in the right side box. After the directory has been read in, a "Check programs" message flashes while accessing the disk to check details of any program files.

<fctn-4> Terminates the process.

<0> key. Cycles screen color choices.

<D> key. Brings up a menu of disk utilities in the right box.

<F> key. Presents current FUNNELWEB Central Menu entries in two blocks. Selection is by reversible marker <<- with <E/X / S/D> using <enter>.

<ctrl => key. Returns to FUNNELWEB from any screen where it is active.

<ctrl A> or <fctn 6> Switch to the Disk Utility screen unless a valid directory is present to be resumed.

<esc> or <E/X> keys. Returns to valid directory display if present.

<fctn 8> key. REDO re-reads directory from the same drive.

<ENTER> key. Returns to the initial selection screen.

<ctrl C>, <fctn 9> keys. Provids the <escape> from error conditions, or return to an existing directory from the drive selection screen.

<E/X> and <fctn E/X> keys. These move the cursor marker up and down the directory, paging it as necessary.

<ctrl E/X> and <B/N> keys. <N> or <ctrl X> pages the directory display towards higher numbered pages, and <B> or <ctrl E> pages back towards the start of the directory.

<space-bar> key. Checks the type of file currently marked by the cursor. The filename will appear as appropriate in one or more of the block of filenames in the lower right block.

<O> key. <O>ldfile restores any marked filenames to original.

<T> and <ctrl T> keys. <T>ag the file under the cursor bar, to leave a visible marker in the center column. Use <ctrl- T> to tag all files, Total size of tagged files is indicated as sectors allocated at the bottom of the file-size column.

<U> and <ctrl U> keys. <U>ntag the file under cursor. Untag all files with <ctrl U>.

<ctrl A> key. Several <A>ctions on <A>ll tagged files are available from a new command set which appears in the key advice block. Details are in the next section.

<R> key. <R>un Program sends the marked filename to the appropriate FUNNELWEB loader or to a internal XB loader.

<fctn R> key Allows the file under the cursor to be renamed.

Edit the name as presented and <enter>. The directory will be re-read to verify the change.

<fctn C> key. Allows copying of one file at a time from the directory drive to another drive or to the same disk under another name. Edit the target drive number and target file name and on <enter> the disk number is checked in the range [1-9]

Disk swapping in a single drive is prompted if drive number and filename of the target file are the same as for the source file.

Copy buffer size is 46 sectors.

<V> key. Allows viewing of ALL file types of any record length to the screen. See View/Print for more details.

<ctrl V> key. Same as <V> except that the display continues in line scrolling until a further key is pressed.

<I> key. Inspect and edit sectors.

<P> key. <P>rint directory causes the current directory to be printed out to the FUNNELWEB print device, (which can be edited )

TAGGED FILES ----------

Several file operations are performed on the selection of files tagged in the previous screen.

<C> key. <C>opies all tagged files to another drive under their existing names. Up to 8 drive numbers may be specified, and each tagged file is copied to the listed drives in turn. To stop the copy process hold down <fctn 4> BREAK which is checked after each file is completely copied. Single drive copy not supported under file tagging.

<U/P> keys. <U>nProtect or <P>rotect all tagged files. The directory is re-read so that the result can be verified.

<D> key. <D>eletes previously tagged unprotected files from the disk. The tagged filenames are presented one by one for verification, The directory is re-read after all tagged files are deleted or <esc> taken. A bloop will sound if the delete fails, which should remind you to check for disk or file protection. If you delete the wrong file, IMMEDIATELY Use the file recovery procedure from the Disk Utility menu.

<ctrl E/X> keys. Page the directory to allow checking of what has been tagged.

<E/X> keys. These force the display back to the normal directory commands before scrolling the cursor.

The Run Program option gives access to the FUNNELWEB loading system directly from the directory display. Selects appropriate loader,offers sub-choices corresponding to the various F'WEB

**Loaders** screen choices.

OBJECT files

Any DF/80 file presented is assumed to be an E/A object file. An object file may be a file normally loadable by FUNNELWEB, a special file that uses the Low-Loader option to load in low memory over the usual E/A utilities, or finally an auto-starting file that does not need to return to the loader. Any other DF files are ignored.

TEXT Files

If a DV/80 file is selected the loader gives a warning message, and if you elect to continue treats it as a FUNNELWEB Script file for loading and linking one or more (up to 15) object files. All other DV files are ignored.

EXTENDED BASIC programs

If a program file is selected with a Basic / XB compatible file header, or a IV/254 file is selected, it checks if a TI XB module is present and loads the nominated file.

PROGRAM Files

If the program file is E/A compatible it will be passed to the F'WEB Loaders with choices presented as for Options 1-3, of which 2 GPL corresponds to E/A 5.

If the program file is not a recognised E/A type a warning is given. Files of this kind that are executable as assembly program files usually load into cartridge RAM, or else are extra long files prepared with FWSAVE.

The View file function presents Display or Internal files, of any fixed or variable record length, on the screen as an ASCII character display. This may not be very relevant (many Display files, usually Dis/Fix 128, may also be found to contain other than the normally readable ASCII characters), and the sector display will be more useful for these.

Program files are written to the screen in lines showing 8 bytes at a time, both as ASCII characters and as hexadecimal bytes grouped as 4 words, but the size of program file fully displayable is limited to about 46 sectors.

The file display in 40 cols may be scrolled by line or page, either by single key or auto-repeat in either direction. Once a record has been read in from disk it is stored to a buffer in VDP and subsequent access to that record is from the buffer. If a file exceeds the buffer limit of 8K the display halts for user input. If <enter> is pressed the display returns to record #1, but any other key causes it to go into circular mode where early records are progressively erased to make room for later ones.

This is indicated by CIRC appearing followed by the new starting record #. Only one file is accepted into the buffer at a time.

Once a file has been read into the buffer all or selectable part of the buffer contents may be printed to the F'WEB print device.

The display is updated in units of a file record which may occupy up to 7 display lines. For program files the unit is a line displaying 8 bytes. Trailing blanks are ignored. The status line keeps track of the numbers of the first and last records visible on screen at any time. The second number will vary rapidly during scrolling. After EoF the number of the last record read from disk is also indicated.

KEY CONTROLS for the file active in the View screen. Print option is available for whatever part of a file is in the buffer.

<X> and <ctrl X> keys. Pressing <X> causes the display to scroll one record towards the end of the file, getting it from low-mem buffer or from disk as needed. <ctrl-X> sets up a continuous line scroll to the end of the file.

<E> and <ctrl E> keys. As above towards the start of the file.

<V/A> keys. Scroll the display one page towards the end of the file.

<ctrl V/A> keys. Pressing <ctrl V or A> causes the display to scroll continuously one page at a time towards the end of the file, getting records from VDP buffer or disk as needed. This is a bit faster than line auto-scroll since less screen updating needs to be done.

<Q> and <ctrl Q> keys. Scroll or start auto-scroll of one page back towards the start of the file.

<space-bar>. The space bar temporarily suspends auto-scrolling while held down, or if not auto-scrolling it causes the last manual scroll operation to be repeated. To cancel auto-scroll hit any key not given a special function. If you have the display stopped just where you want it with the space bar, press another key before releasing the space bar.

<S> key. Moves the display to the start of the file.

<F> key. Moves the display to the finish of the file.

<ctrl 1-5> keys. At any stage each of these sets a marker at the line at the top of the screen. They are all initialized to the start of the file when a new file is read from disk. Marker 5 is always set to the last record in buffer as it is read in from disk until specifically reassigned. In Circular mode markers are set to the start of

file as they are overtaken.

<1-5> keys. At any stage these keys return the display to the previously defined marker.

When a file has been partially or completely read into a buffer, a new command key becomes available for use,

<ctrl P> key. The current file is printed out from the record at marker #1 to the last record before marker #5. This allows parts of a file to be printed out as specified by editing the print device name which may be a disk file or complete pathname .

Disk and Sector Utilities----------

DISK UTILITIES menu is reached from the entry screen by pressing <D> (or <ctrl A> if no valid directory is present). The menu appears in the box normally devoted to the directory display.

Keys <E> and <X> or <space> drive the scroll bar up or down with wraparound, select by the <enter> key.

FORMAT DISK----------

After entering drive # in which a disk is to be formatted, Caution reminders are issued if disk is already formated. You are then prompted for the number of sides (S or D), the density (S,D, or Q for 80 track drives). <Escape> may be used at any time to back out. When formatting is complete you are asked if validation is desired, The sector bitmap can be updated to mark off bad sectors.

Normally the disk controller DSR subprogram is used to format the disk. Myarc floppy disk controllers with the original 40-Track DSR ROM will format 16 sectors per track this way in double density. DISKREVIEW does NOT allow for this and always writes a disk header showing the normal 18 sectors per track. If you are using DR with a such a Myarc controller, you MUST indicate its presence by setting a flag in the DR file in the sixth word of the first sector (after the 3 word file header and the initial B >xxxx instruction). Normally these two bytes are null, and >FFFF >xxxx >xxxx >xxxx there will flag Format to use a special direct access 18 sector per track routine. Myarc FDCs with 80-Tk ROMs appear to default to 18 sector format.

VALIDATE DISK----------

This function available directly from the Disk Utilities menu or follow-on from Format Disk routine. Information window updates a decimal count of the sector being read, the last bad sector encountered if any, and the number of bad sectors if any. The <fctn-4> key is active, and if pressed it terminates the process before new sectors are accessed.

If there are bad sectors you are asked if the VIB bitmap requires updating.If you have a MYARC controller, then use another F'WEB Farm program DISKHACKER for more detailed diagnostics.

RENAME DISK----------

Well it does what it says, alter as required.

SWEEP DISK----------

After drive # is selected, caution message is displayed, if you proceed it removes all directory references to files on the disk and rewrites the disk headers as a new initialized disk. The files are not physically erased, use the file recovery procedure if error is made

RECOVER FILE----------

File recovery after Delete or Sweep Disk is possible only if no subsequent write operations have been made to the disk. The filename to be recovered is requested If found " file recovered" message is displayed Check recovered

MYARC RAMdisk Utilities----------

The CALL PART initializing and CALL EMDK drive number setting utilities are supported by means of DSR subprogram access. The only absolute address used is for reading the current EMDK for display, and nothing is written to the RD other than by the CALLs. No range checking is currently done on the number entered for EMDK. No screen editing provisions are currently made to get other than CALL PART(400,80), but enough room has been left in the program that any CALL PART may be installed with the sector editor. Write for details of how to go about it.

HORIZON RAMdisk Utilities ----------

DN, AO/AF subprograms are supported for Horizon/OPA Vn 8.14 ROS. Disk number change is in the form CALL DN.o.n where "o" is the existing old disk number and "n" is the intended new number.

CALL AO.x or AF.x turn auto-booting on or off respectively. The ".x" extension is optional if only the first HRD is to be switched.

QUEST RAMdisk AON/F----------

The AON and AOF CALLs are provided for the HV99'ers Quest RAMdisk.

SECTOR and SEARCH UTILITIES----------

The Sector Utilities are invoked by <I>nspect Sector from the Directory screen. Selection from the menu that appears in the message window is either by number or the first letter of the corresponding entry. Editing by absolute sector or offset into a file is supported. String search is either by file offset or absolute sector, for either ASCII or HEX byte strings. A wild character or wild byte may be set in the search string. Auto string replace is not supported.

<1/S> keys. Lead directly to the sector editor which appears on the sector display screen.

<2/F> keys. Enable a string search in the file currently marked by the cursor in the directory, and string entry follows.

<3/D> keys. String search is now by absolute sector number. See the later String Search section in this file.

<E/X> keys. Force the display back to the normal directory commands before scrolling the cursor.

SECTOR EDIT----------

On selection of Sector Edit a new menu with 5 choices appears in the box at upper right on a new screen.The current file under the cursor is written up as a reminder. Select by # or Initial letter of the option name.

<1/F> keys. Present for editing the File Descriptor Record for the current file under the cursor. Absolute mode is set.

<2/O> keys. Set up editing of the sectors within the current file. The desired offset is entered as a 3 digit hex number.

The maximum offset is shown for guidance. When a sector is displayed in file offset mode both the file offset and absolute sector are indicated.

<3/A> keys. The absolute sector number is then entered in 3 digit hex form before the sector is read.

The chosen sector is presented in ASCII or hexadecimal. Toggle between these with the <A> and <H> (or <Q>) keys. Editing keys are given in the lower left block, a'la DSKU by J.Birdwell.

An accelerating auto-repeating flashing cursor appears in either display mode depending on the entry path. When an entry is altered in either display the corresponding change is marked by reverse video. The HEX /ASCII display

accepts kind for editing, running count of cursor position in hex is displayed, along with the byte under the cursor.

<ctrl E/X> and <fctn E/X> keys. Drive the cursor up or down a line with wrap-around.

<ctrl S/D> and <fctn S/D> keys. Drive the cursor along a line with wrap-around at sector start and end.

<ctrl A> key. Forces the cursor and entry into ASCII mode.

<ctrl H/Q> keys. Force the cursor and entry into HEX mode. The cursor will start at the most significant nybble of the current byte.

<ctrl O> key. When a sector is read in a spare copy is made. This restores the <O>riginal version to undo editing changes.

<ctrl M> key. <M>akes the currently displayed and edited sector over as the reserve copy.

<ctrl R> key. <R>ecalls the reserve sector copy to the edit windows. The <ctrl M/R> keys make it possible to transfer sectors from one place to another.

<ctrl N> key. Moves to the <N>ext sector. In absolute mode this is numerically the next. In file offset mode this is the next sector in the file and may skip about over the disk in absolute sector equivalent if the file is fractured (indicated by the asterisk in the directory display).

<ctrl B> key. Moves <B>ack a sector on the disk or in the

<ctrl W> key. <W>rites the sector back to disk at the current sector number on the current disk, after first asking for confirmation. REMEMBER - careless use can destroy your files.

STRING SEARCH----------

String search allows for ASCII or Hex string entry, specification of a wild card. For ASCII entry this has "?" as the original default, and for HEX search this is byte >00. When the wild-card is entered all occurrences of the previous wild-card in the search string are changed to the new value, if you do not use the full length, leave the trailing part as the wild-card. The function of a wild-card character in a string search is to flag a character or byte of the string to be ignored in making comparisons in the search so that as long as the other bytes match that one in the sector can be anything.

In disk search (absolute) mode the start sector for the search is requested. The search may be terminated at any time by pressing <fctn 4>. File search shows both file offset and absolute sector numbers as the search proceeds. The HEX search mode allows the search to be forced to even word boundaries. When a match is found in a sector the display switches to the sector edit screen with all occurrences of the matching string highlighted in the secondary color set.

<1/C> key. Return to directory screen and <C>ontinue search.

<2/E> key. Transfer to <E>dit mode in either ASCII or HEX and absolute or file offset mode as appropriate. The cursor appears at the first occurrence of the search string. Editing then proceeds as normal.

<3/Q> key. <Q>uit the search.

After going to <E>dit during string search <esc> returns to a further selection.

<1/C> key. Continues search at sector after the one last found before going to <E>dit, either by file or absolute.

<2/R> key. Restarts the search from the start, with the existing string as default.

<3/A> key. Abandon the string search function.

80-Track Disks----------

See docs for full details of Catalog, Formatting, etc.

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W-AGE/99 * NEW-AGE/
99 * NEW-AGE/99 * N
EW-AGE/99 * NEW-AGE
/99 * NEW-AGE/99 *

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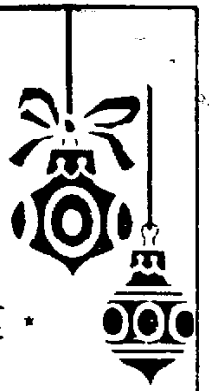


* by JACK SUGHRUE, Box 459, East Douglas, MA 01516 *

#9

COMPRODINE, Part One

Okay, I've been hearing about JIFFY CARD and ARTIST PRINT SHOP and JIFFY FLYER and GIANT ARTIST POSTERS for some time now, but I just never got around to demoing the materials for NEW-AGE/99 reviews. Not because I'm unfamiliar with the work of COMPRODINE owner Rodger Merritt. On the contrary, I own and use and thoroughly enjoy PICTURE IT and PRINT IT. They are two superb graphics/text packages that most TIers would not want to be without once they got using them regularly (particularly the handy and very professional disk catalog printer program).

Sister Pat Taylor of Dubuque, Iowa, has been the leading fan of COMPRODINE materials in the world the past few years. When I was in for repair last year following an accident, Sr. Pat and her contingent of TIing nuns at the hospital where she lives inundated me with unique and colorful "get well" cards and banners and signs. They also sent me a nice gift of a package of delightful greeting cards for all occasions. Everything was made on the TI with COMPRODINE software.

Now when Sr. Pat finds something useful, user friendly, and fun, it gets used and used and used. Her use of COMPRODINE goodies is the best review there is. But I've been lax in my reviewer duties.

So it was with great pleasure when Rodger Merritt called me from his home in California to see if I'd be interested in demoing some COMPRODINE software at the Boston Fayuh.

"YES! YES! YES!" I screamed before he changed his mind.

I had never met Rodger, so he didn't know what kind of TI maniac he entrusted his masterpieces with. Phil Townsend of the Kawartha group in Canada knew I'd be at the Boston shindig and recommended me. (It's obvious that Phil, a fellow elementary teacher, had never met me, either.) Anyway, Rodger ran up a two-hour phone bill explaining each of the pieces of software.

I could hardly contain myself waiting for the mail the next few days.

Then... THE DAY! When I came home from work, my wife informed me that the package had arrived from COMPRODINE. She did require my attendance at the dinner table under penalties of Doom, Death, and Destruction (though not necessarily in that order). So I complied with She Who Must Be Obeyed and waited impatiently to open the treasures until after cleanup.

I'm not sure my little fifth-graders didn't suffer much the next day because of that Merritt fiend.

I took my package to my Computer Room, opened it, and played with the new toys - er, tools, I mean - until almost 4 AM. As I have to get up at 5 to go to work, I didn't get much of a beauty rest. (I was a real beauty at work next day, I can tell you.), but did not learn a lesson. I was at it again when I got home; once again to the wee hours (this time 2 AM). But what fun!

Fortunately, I already owned PRINT IT and PICTURE IT and all of the Great Lakes Software in the package also distributed by COMPRODINE: JOYPAINT 99, JOYPAINT PAL, CLIP ART, EXTENDED BUSINESS GRAPHS, BANNERS 99, and the superb CERTIFICATE 99 with its companions). Otherwise, I'd

still be at it.

Because I'd like to spend next month's "Part Two" article entirely on the graphics' programs for which COMPRODINE is justifiably famous (ARTIST PRINT SHOP, JIFFY CARD and FLYER (including color versions), FORM SHOP, GIANT ARTIST POSTERS, and all the various companions), I'm going to use the rest of this article to examine a couple of COMPRODINE's other programs: LIVING TOMB and WAR ZONE.

These are games by a decidedly fiendish 14-year-old lad, Quinton Tormanen. Because both have permanent scoring systems built in (which I ♥ ), I'd suggest making backup copies and store the originals. Actually, I'd suggest you do that with all COMPRODINE materials, as they are unprotected.

These fast auto-load assembly games are so good, so professional, that I have a hard time picturing anyone so young devising them.

WAR ZONE ($10), a futuristic arcade game, is almost as fascinating for the instantaneous status and scoring boxes along the right side of the screen as the game itself. Not quite. But they are well designed and ingenious, if you have time to view them. ("P" gives you pause when you need it.) Mostly, your time will be taken up trying to get your M15 through 6 levels (each a 2500-mile flight over rough terrain - rough, because you are being attacked in 5 different ways by 5 different enemy vehicles) to the enemy bases which must be destroyed. This is no easy task. However, you will be rewarded with an extra craft added to your one-at-a-time fleet for every 1000 miles you survive (2 levels). There are color and attack pattern changes as you move over new terrain. The enemy gets more vicious the better (farther) you get.

Though you have unlimited firepower (including bombs for the land vehicles), your greatest asset is maneuverability. It's one of those frantic type games that raise havoc with your blood pressure.

LIVING TOMBS ($15), a graphic adventure, is quite different. It's a "Tunnels of Doom" type of game with lots of excellent differences. (If you don't like TOD, just wait a second. LIVING TOMB has some interesting features, including an ability to view all kinds of stats and make all kinds of smart decisions BEFORE you make a fool of yourself by getting killed.) The multi-level tomb you travel through is a series of very complex 3-dimensional mazes. This 3D aspect is neat. Unless you make a map, you will get lost. I even had to drop some items along the way (like Hansel) to make sure I could find my way back to the trap doors to get to different levels. LT is rich with menued features, windows, and treasures, weapons, and monsters galore. You start with nothing but can gather up the right equipment left by previous brave but dead adventurers. And then only if you slay some demonic monsters to get them.

What are you doing in this tomb? Well, an evil Alchemist from days of yore was buried here. It is his tomb. A gem of suspected power was buried here, too. A curse was put upon this land of Ryder, and, though many have tried to enter the tomb and remove the evil gem to stop the curse, all have failed. Your mission, succeed.

The windowing menus, alone, are worth the price of this user-friendly, addictive, satisfying adventure. LIVING TOMBS: an excellent investment in intellectual and visceral fun. I hope Quinton continues to program for the TI.

COMPRODINE (which, by the way, stands for COMputer PROgrammers' Disktribution NEtwork) is at 1949 Evergreen Ave., Fullerton, CA 32635. Ask for a catalog. Shipping and handling is $1.50 for one item, $3.00 for two or more.

(If you see RAY AGE/99 please put me on your exchange list.)

# Be of Good Cheer...

#10

COMPRODINE, PART TWO

One of the nicest features of JIFFY CARD ($15) its single-sheet manual. This includes pictures of its 68 graphics along with a sample of a card itself. The rest of the manual serves as a quick reference sheet. It's simple, direct, easy. No 40-page tutorials; no heavy-duty programming knowledge required. All you need is one drive, 32K, and a printer: a neat, compact, delightful piece of software that does exactly what it's supposed to quickly and well.

JC takes about a minute to load from XB, but, once loaded, all borders, large fonts, and small fonts are awaiting your keypress. There are 8 prompts for you to follow step-by-step with active keys listed on screen at all times, so you are gently guided through all your creations. You first set up a location for your card-cover graphics; then you type the title and select a border by tapping the spacebar to cycle through. Next you choose the ONE graphic to be placed in those areas you designated in Step One. This same graphic may even be overlapped in repetition.

Text is now entered. Say what you want to say.. Next do the same for the inside of the card. Then choose one of 7 small fonts for the front and again for the inside. It's fairly easy to toggle between the different parts of the card to make changes. Finally, you may print the card. Before you do, though, you may opt to SAVE it for posterity, as previously made cards my be LOADed quickly and modified easily. Basically, that's it.

For TI owners who wonder how the fun went out of computing, this is a program to get if back. In the three weeks I've had JIFFY CARD, I've already used it over a dozen times.

Now I wish I had spent a few more dollars to buy the color version of my NX1000 printer, because there is also COLOR CARD ($25), the mouth-watering color version of JC. Both versions come with a template for xeroxing or just cutting exact-size envelopes for these cards. A thoughtful touch, that. CARDS 4ALL OCCASIONS ($10) is an "as is" or easily personalized collection of spiffy cards for easy JC loading.

Once you've mastered JIFFY CARD, you should find JIFFY FLYER ($10) or COLOR FLYER ($20) a piece of cake. The commands are very similar for the making of an easy to read, easy to create, eye-catching one-pager for yard sales, announcements, pronouncement, mini-posters, whatever. These programs also use the same (CSGD) graphics which can be imported from everywhere or purchased in a maximum diskful (127 pictures) for $10 (CSGD GRAPHICS). A 50-file collection of borders and fonts may also be purchased for $10 (CARD/FLYER GRAPHICS). It's this sort of companion support that makes these inexpensive JIFFY programs even more valuable. That's why so many people are happy that COMPRODINE is also distributing Great Lakes Software (at an incredibly low $10 for each item). JOYPAINT 99, PAL, CLIPART DISK (which is a nice trio); CERTIFICATE 99, COMPANIONs 1 & 2, GRAPHIC COMPANION (which is a nice quartet). JOYPAINT is an excellent artist program, particularly with the PAL. CERTIFICATE 99 is, to date, the state of the art certificate maker for the TI. The support

material for both programs make them extremely valuable tools (toys) for any owner.

BANNERS 99 and EXTENDED BUSINESS GRAPHS are the other two Great Lakes products distributed by COMPRODINE.

However, they have many more of their own products. PICTURE IT ($10) and PRINT IT & PLUS ($13) convert instances to banners, to Funnelweb, or to Extended BASIC for printing through your Writer files; prints incredibly professional disk catalogs, titles, labels, with excellent user-designed materials, including sprites.

BINGO (just $5) not only lets you play two screen boards but allows the printing out of boards for everyone. Good graphics and speech. FORMSHOP ($15) permits very flexible creation of forms for business, hobby, or personal use with the same ease as the JIFFY programs.

If you've gone to a TI fair recently and looked up at a gigantic computer-made poster, it was done with GIANT ARTIST POSTERS ($15) which lets you take <u>any</u> TI-ARTIST screen, whether acquired or created, and print it out in sizes from 10 by 14 inches to 5 by 8 feet! For these king-size jobbies I would recommend printing it out just before you go to bed and pull it off in the morning. Although the program works very fast (and easy), printing anything that size takes a considerable time.

COMPRODINE also publishes a neat, professional date-tracking electronic calendar with lots of features. Similar to SCHEDULE MANAGER (Asgard) and REMIND ME (Genial), REMINDERS helps you to organize your life in positive, realistic ways. A good buy at just $10.

But the new gem of the COMPRODINE treasure chest of software goodies is ARTIST PRINT SHOP. Written by Paul Coleman in fast and comfortable c99, this program uses TI-ARTIST graphics and fonts without conversion. So you could draw from the thousands of files already in user-group libraries, hidden in BBS listings, or ordered from commercial sources; or you could create your own in TI-ARTIST and use them directly.

Basically, the 3-disk package ($25 - and an additional $10 for the not-required [but recommended] BORDER MAKER package) permits the creation of very dramatic signs, letterheads, banners, and flyers.

Follow the 18-page manual through one full time, performing each of the easy tasks, and you will be immediately comfortable with all of the sections, as they have a very similar structure. After a couple creations the manual is no longer necessary. I used it only two days before I gave an hour-long demo of all its sections at the recent New England Fayuh. Most of you would have only needed two hours, but I tend to play with things for a while BEFORE using the manuals. My sisters Sonia and Pat both claim I was dropped on my head numerous times as a baby. In any event APS is an easy-to-use even for me type of program. And varied and useful and fun.

The BANNERS section of this large piece of electronic wizardry is one of the most flexible I have ever used. It provides both text and graphic options rarely seen on most banner programs.

The SIGNMAKER makes very dramatic signs, flyers, pages using a large and a small ARTIST font and 5 different graphics which can be mirrored, magnified, and/or multiplied for all kinds of flexible creations.

The STATIONERY portion also offers some great flexibility with some exceptional results.

In short, ARTIST PRINT SHOP would be a nice addition to your collection of super TI programs.

Your best bet would be to write COMPRODINE for a catalog (or order any of the above adding $1.50 S&H for one item or $3.00 for two or more) to 1949 Evergreen Ave., Fullerton, CA, 92635.

(If you use NEW-AGE/99 please put me on your exchange list.)

# Cross-Word maker.

~~(Or the world's biggest plea for help.)~~

In keeping with the idea of giving our readers something to do over the christmas holidays, I have included an unfinished piece of code which I started witing some few years ago and never quite finished.

The idea is based on a very handy little program on the microbee computer which creats cross-words and prints them out.

The program prompts for a word, enters the word when it finds a match for one of the letters in the word and another letter already entered and gives you the option of re-trying to position the word somewhere else, or aborting that word.

After the words have all been entered, the program should then number the words in the matrix and then ask for clues for each word in use.

Once this has been done, the program should then fill in all the blank squares with stripes or black and then allow the user to print the creation, including clues, onto paper and also have an option for printing the answers on another page.

I have begun writing this program using MYARC'S EXTENDED BASICII as it has very good drwing routines which enable thew matrix to be drawn very easily.

The logic is becoming a little hazy at the moment but there is a start made and maybe you might be interested in adapting it to your use.

The xdump program called in line 40 is simply a public domain dump put out by the horizon group(I think).

Good luck.. I hope you enjoy the challenge .

```
35 CALL INIT
40 CALL LOAD("DSK1.XDUMP/O")
5          0                    D          I          M
LWRD(25),WORD$(30,15),VINDX(30,15),HINDX(30,15)
100 CALL GRAPHICS(3)
110 CALL CLEAR
120 CALL CHAR(97,"011129457D4545FF")
130 CALL CHAR(98,"017945794545?9FF")
140 CALL CHAR(99,"01394545414539FF")
150 CALL CHAR(100,"017945454579FF")
160 CALL CHAR(101,"017D417941417DFF")
170 CALL CHAR(102,"017D417941414FF")
180 CALL CHAR(103,"013945414D4539FF")
190 CALL CHAR(104,"0145457D454545FF")
200 CALL CHAR(105,"011D090909091DFF")
210 CALL CHAR(106,"011D0909094939FF")
220 CALL CHAR(107,"01252931312925FF")
230 CALL CHAR(108,"014141414141?DFF")
240 CALL CHAR(109,"01456D55454545FF")
250 CALL CHAR(110,"0145655555 4D45FF")
260 CALL CHAR(111,"01394545454539FF")
270 CALL CHAR(112,"017945457941 41FF")
280 CALL CHAR(113,"013945455 54D3DFF")
290 CALL CHAR(114,"017945457 94945FF")
300 CALL CHAR(115,"01394521194539FF")
310 CALL CHAR(116,"017D1111111111FF")
320 CALL CHAR(117,"01454545454539FF")
330 CALL CHAR(118,"01454529292911FF")
340 CALL CHAR(119,"0145455555 529FF")
350 CALL CHAR(120,"01454529112945FF")
360 CALL CHAR(121,"01452911111139FF")
370 CALL CHAR(122,"017D09112141?DFF")
375 CALL CHAR(123,"01010101010101FF")
376 CALL CHAR(124,"499325499325 9FF")
400 !
410 !****DRAW BORDER****
420 CALL RECTANGLE(1,8,8,8,128,128,8)
430 !
440 !**DRAW HORIZ LINES***
450 FOR P1=8 TO 128 STEP 8
460 CALL DRAW(1,P1,8,P1,128)
470 NEXT P1
480 !
490 !***DRAW VERT LINES***
500 FOR P2=8 TO 128 STEP 8
510 CALL DRAW(1,8,P2,128,P2)
520 NEXT P2
530 !
540 X=0
550 X=X+1
555 WRD$=""
560 !**DISPLAY MESSAGE**
570 CALL WRITE(1,22,1,"ENTER A WORD AND PRESS
ENTER.____
  ")
580 !
590 !*** ORTAIN LETTER ***
600 DC=2 :: L=1
610 CALL KEY(0,K,S):: IF S=0 THEN 610
620 IF K=13 THEN 680 :: IF K<65 OR K>90 THEN 610
630 WRD$=WRD$&CHR$(K+32):: WORD$(X,L)=CHR$(K+32)
640 LWRD(X)=L :: L=L+1
650 !**PRINT LETTERS TO MAKE WORD**
660 DC=DC+1 :: IF DC>15 THEN 870 :: !INC COLUMN
670 CALL WRITE(1,23,DC,CHR$(K)):: FOR DELAY=1 TO 10
:: NEXT DELAY :: GOTO 610
680 !
690 !** CHECK FOR OK**
700 CALL WRITE(1,24,1,"THIS WORD OK?(Y/N)"):: K=60
710 CALL KEY(0,K,S):: IF S=0 THEN 710
720 IF K=89 THEN 760
725 IF K<>78 THEN 710
730 !CLEAR WRONG WORD,'SETDELAY & RE-ADMIT
WORD
740 WRD$="" :: FOR DELAY=1 TO 80 :: NEXT DELAY ::
CALL WRITE(1,24,1,"
          "):: K=60 :: GOTO 560
750 !
760 !*** DISPLAY WORD IN GRID ***
765 IF X>1 THEN 13000
770 H=1 :: V=0 :: IF X=1 THEN R=2 :: C=2 ELSE 780
780 CALL WRITE(1,24,1,"                    ")
790 CALL WRITE(1,R,C,WRD$)
791 CALL WRITE(1,22,1,"                                  ")
7          9          2                C          A          L          L
WRITE(1,22,1,"<R>ETRY..<L>OCK..<A>BANDON."):
793 CALL KEY(0,K,S):: IF S=0 THEN 793
794 IF K=82 THEN 10000
795 IF K=76 THEN 11000
796 IF K=65 THEN 12000
797 GOTO 793
800 GOTO 550
810 !
860 !**WORD TOO LONG****
870 CALL WRITE(1,24,1,"WORD TOO LONG.ANY TO
REDO")
```

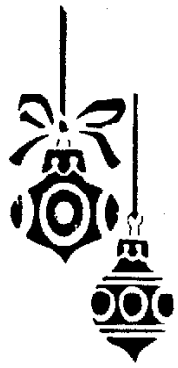
```
880 CALL KEY(0,K,S):: IF S=0 THEN 880
890 FOR LL=1 TO L :: WRD$="" :: WORD$(X,LL)="" ::
LWRD(X)=0 :: VIDX(X,LL)=0 :: H
INDX(X,LL)=0 :: NEXT LL :: CALL WRITE(1,24,1,"
"):: GO
TO 560
10000 !
10010 !*** RETRY ROUTINE***
10015 LET H=0 :: LET V=1
10020 !PART 1.. TRY VERTICALLY
10021 FOR BLANK=R TO LEN(WRD$)+1 :: CALL
WRITE(1,R,BLANK+C-1,CHR$(123)):: NEXT B
LANK
10030 RR=2 :: CC=2 :: FOR R=2 TO LEN(WRD$)+1
10040 LETTER$=WORD$(X,R-1)
10050 CALL WRITE(1,R,C,LETTER$)
10060 NEXT R
10065 LET V=1 :: GOTO 792
10066 RR=R :: CC=C :: FOR VV=1 TO LWRD(X)
10067 LETTER$=WORD$(X,VV):: CALL
WRITE(1,R,C,LETTER$):: R=R+1 :: NEXT VV
10068 GOTO 791
11000 !
11010 !** LOCK IST TIME**
11020 !A) HORIZONTAL
11030 IF H=1 THEN 11040 ELSE 11100
11040 FOR ACROSS=1 TO LEN(WRD$)
11050 HINDX(X,ACROSS)=ACROSS+1 ::
VINDX(X,ACROSS)=R
11060 NEXT ACROSS :: GOSUB 20000
11070 GOTO 550
11100 !B) VERTICAL
11110 IF V<>1 THEN 10000 ELSE R=RR
11120 FOR DOWN=1 TO LEN(WRD$)
11130 VINDX(X,DOWN)=R :: HINDX(X,DOWN)=C :: R=R+1
11140 NEXT DOWN :: GOSUB 20000
11150 GOTO 550
12000 !
12010 !***ABANDON ROUTINE**
12020 CALL WRITE(1,22,1,"
                    "):: GOTO 555
13000 !
13010 !***MATCH LETTER WITH LETTERS IN GRID**
13020 FOR LETNO=1 TO LEN(WRD$)
13021 LETTER$=WORD$(X,LETNO)
13030 FOR Y=1 TO X-1 :: FOR ZZ=1 TO LWRD(Y)
13032 IF LETTER$=WORD$(Y,ZZ)THEN 13100
13040 NEXT ZZ :: NEXT Y :: NEXT LETNO
13050 CALL WRITE(1,23,1,"NO MATCH FOUND USE
ANOTHER WORD
"):: GOTO 792
13100 !
13110 !MATCH FOUND
13120 CALL WRITE(1,24,1,"MATCH
FOUND",24,12,LETTER$,24,13," "&STR$(LETNO)&STR$(Z
Z)&"      ")
13130 LET R=VINDX(Y,ZZ):: LET C=HINDX(Y,ZZ)
13140 !
13150 !**CHECK FOR OTHER LETTERS IN LINE**
13160 !
13165 WORD=0 :: COUNT=0
13166 WORD=WORD+1
13167 COUNT=COUNT+1
13180 IF LETNO=COUNT THEN 13190 :: IF
R=VINDX(WORD,COUNT)THEN 13220
13185 IF COUNT<>LWRD(WORD)THEN 13186 ELSE 13167
13186 IF WORD<X-1 THEN 13166
13190 A$="OK" :: GOTO 14000
13200 CALL KEY(0,K,S):: IF S=0 THEN 13200
13210 GOTO 770
13220 FOR COLUMN=1 TO LWRD(WORD):: IF
C=HINDX(WORD,COLUMN)THEN A$="ERROR" :: GOT
O 14000
13230 NEXT COLUMN :: GOTO 13190
13240 !
13250 !
13260 !
13270 !
13280 !
13290 !
14000 CALL WRITE(1,20,20,A$):: IF A$="ERROR" THEN
10030
14010 GOTO 13200
20000 !
20010 !PRINT VINDX AND HINDEX AND LETTER LATER
CAN BE USED TO CONVERT V&H INDX T
O R&C VALUES
20015 R=2
20020 FOR LLL=1 TO LEN(WRD$)
2 0 0 3 0 C A L L
WRITE(1,R+LLL,17,WORD$(X,LLL),R+LLL,20,STR$(VINDX
(X,LLL)),R+LLL,23,ST
R$(HINDX(X,LLL)))
20040 NEXT LLL
20050 RETURN
NO CARRIER
ATH
Ok
```

## A mystery type-in program for you to try.

This little program will give all you Aussies a litle melancholy around Christmas...

Once again Thanks Bob.

```
10 M=400 :: FOR B=1 TO 88 :: READ D,T :: CALL SOUND(M*D,T,3)
20 DATA 1,196,.5,196,.5,196,1,175,1,175
30 DATA .5,156,.5,175,.5,196,.5,156,.5,131,.5,147,2,156
40 DATA 1,117,.75,156,.25,196,1,233
50 DATA 1,233,1,233,1,233,2,233
60 DATA .5,156,.5,175,1,196,.5,196,.5,196,2.05,175
70 DATA 1,175,.5,156,.5,175,.5,196,.5,156,.5,131,.5,147,2,156
80 DATA 1,117,.50,156,.25,196,1,233,.5,208,.5,196,1,175,.5,175,.5,175,1,156
90 DATA 1,233,.75,233,.25,233,1,233,1,196
100 DATA 1,311,.75,311,.25,294,1,262,2,233
110 DATA 1,233,.75,233,.25,233,1,262,.75,233,.25,233
120 DATA 1,233,.5,208,.5,196,2,175
130 DATA .5,156,.5,175,1,196,.5,196,.5,196,2.1,175
140 DATA 1,175,.5,156,.5,175,.5,196,.5,156,.5,131,.5,147,2,156
150 DATA 1,117,.5,156,.5,196,1,233,.5,208,.5,196
160 DATA 1,175,.5,175,.5,175,2.5,156
170 NEXT B
```



Who was it who raced off from an out-of the way vineyard to the largest tourist vineyard out Cessnock way to pick up some luncheon requirements for a group of us recently and then met the group again at another small vineyard (they certainly hadn't wasted any tasting time while our hero was away) only to have to drive back to the large, tourist type vineyard for lunch, after the group decided to change their minds over luncheon location.

With mates like that, who needs enemies ?

# HANDY TIPS FOR THE TI 99/4A

These TIps came to us via the Spirit of 99, May 1990

Here are a few tips for beginners (good for experienced programmers, too) from old newsletters.

* If you have the speech synthesizer and the TEII cartridge, here is a trick for debugging programs. All you have to do is enter your program, type

LIST "SPEECH" and hit enter.

The computer will read your listing back to you.

* If you want to disable the quit key (FCTN +) type

CALL INIT :: CALL LOAD(-31806,16) and hit enter.

You must have Extended BASIC.

* If you are going to save a program to tape and type OLD CS1 instead of SAVE CS1, don't panic! Press FCTN E then press enter. This will take you out of the taping loop.

* You don't have to enter line number in TI BASIC or Extended BASIC. Before you start enter

NUM n(1), n(2)

where n(1) is the starting line number and n(2) is the desired increment.

* In TI BASIC you can edit a line with the edit command or with the FCTN key and either the E or X keys. To use edit, type

EDIT n

where n=line number. The other way is to enter the line number and press FCTN X or FCTN E. This is the only edit method recognized by Extended BASIC.

* You can list programs to the screen in several ways. Try these

LIST
LIST n
LIST n-
LIST n-n

* If you want or need to re-number the lines in a program either to make it neater or make room for new lines you don't have to re-number them individually. Just enter the command

RES n n

for resequence start number, interval between lines.

* When entering a listing in Extended BASIC and several lines are very similar, you can save time by typing in the first line and hitting enter. Then press FCTN 8 (Redo). Change the line number and make the changes to the line as needed and hit enter.

* Have you ever pressed Erase by mistake and lost the whole line? Don't panic and DON'T hit enter. Instead press FCTN ? and enter. Your line will still be intact.

* In Extended BASIC type

RUN CS1

Follow the instructions on screen. It will load the program and then run it automatically.

* In Extended BASIC you can use REM or ! to put documentation in a program that the program will ignore.

* When you want to stop a listing on the screen in Extended BASIC, just hit any key. To start the list again, strike any key.

* You can add comments after a GOSUB or GOTO. They won't interfere with the program and you don't need REM or !

* With Extended BASIC and a disk system, save a program under the name LOAD. When you start with this disk in drive #1, it will load and run that program.

* If you have the TEII cartridge and the Speech Synthesizer type in the program on page 37 of the TEII manual. Try entering strings of K's, Q's, U's, W's, J's or X's for

different sound effects. Try mixing them for interesting sounds.

*If you have Extended BASIC and 32K type this in as the last line of your program

CALL INIT :: CALL PEEK(2,A,B) :: CALL LOAD(-31804,A,B)

This will return you to the title screen when the program is ended.

* When hooked up to a black and white TV use

CALL SCREEN(15)

This will disable the colour generator and remove the vertical lines you may have seen.

* To speed up loading Infocom games, don't use Extended BASIC. Use Mini-Memory or E/A instead. To use these, select the Load & Run option and type

DSK1.BOOT

When this is finished loading press enter until you get the program name, then type START. On the MM you'll get an error after BOOT loads, but keep pressing enter and proceed as above.

* If you want to disable the keyboard for any reason, type in

CALL LOAD(-3257,2,128)

You will have to turn off the console to regain control.

THIS ARTICLE APPEARED ON THE INQUESTOR BBS AND WAS DOWNLOADED FOR THE INTEREST OF OUR MEMBERS...

Type . Public Post - Msg # 485 To : ALL From : DAVID WINTON Subject : A Story of the TI99/4A. Time/Date : 11:04:49 PM 09/30/1990

# The Texas Instruments TI99/4A Home Computer - A Short History

The TI99/4A Home Computer .. is a 16 bit (16 lines on the data bus). This microprocessor was developed by Texas Instruments mainly for Industrial control applications and has been used extensively for this. Several Integrated circuits including the 9901 Programmable Systems Interface, the 9918 and 9929 (PAL) VDP IC's as well as others in the 9900 Family System developed and produced by Texas Instruments became available and were included into a 16K microcomputer of the early 1980's.

The Texas Instruments TI99/4 was first introduced to provide a computer for home use with TI BASIC in ROM with Colour, Graphics and Sound. Peripherals were released including a Thermal Printer, RS232C interface, Disk Controller and a 32K*8K Memory Expansion unit, all joined the expansion port in line, if most units were connected it was an impractical 1.5 meters long. The assumption at the time was that most users of the Home Computer would only require up to three peripherals at the one time.

Software was sold in ROM cartridges called Modules also disks and cassettes. Texas Instruments discouraged externally written programs and also the development of peripherals for the computer. A closed architecture policy was maintained and a propriety language named GPL (Graphics Programing Language) in the ROMs, added to the difficulty of the programmers who wanted to fully use the capabilities of the computer without the slow interpreted Basic which lacked the Peeks and Pokes of other microcomputers. An Extended Basic with 40 new commands and improved subprogramming capability, with both local and global variables and Sprites was released in 1981 together with an improved keyboard the TI99/4A. An Editor Assembler and an alternate expansion system incorporating a metal box into which eight cards could be accommodated similar to the Apple II but external. This was a more compact arrangement for a fully expanded system, however a rather ugly black "fire hose" connector linked the PE Box with the computer. A Word Processor called TI Writer and a Module with 4K CPU RAM and a Line-By-Line Assembler called Mini Memory, appeared in 1982. Microsoft Multiplan, a P code USCD Development System and LOGO II plus several modules including Parsec added to the versatility of the TI99/4A. Educational software and

games cartridges with Speech capability and ATARI Games and INFOCOM Adventures, provided enough for users both at home and Small Business.

User Groups were established World wide and there were further new developmental plans for the computer including Wafer Tapes and a smaller more compact expansion system called Hex Bus. Prices for the computer software and peripherals remained high, a fully expanded system cost nearly $3000 A. There was some bad publicity from a batch of US mains transformers which apparently caught fire and problems came when Texas Instruments attempted to capture more of the Home Computer market through Expensive Advertising campaigns (hiring Bill Cosby). The main competition on the US market in 1983 was from Commodore Computers, initially with the VIC20 then the C64. A price cutting War began between Texas Instruments and Commodore Computers. At one stage Texas Instruments were selling the TI99/4A for less than the production cost $99 US. Finally late in 1983, Texas Instruments announced it's withdrawal from the Home Computer market. The withdrawal apparently cost 180 Million US dollars, which was written off to produce an overall gain through clever accounting.

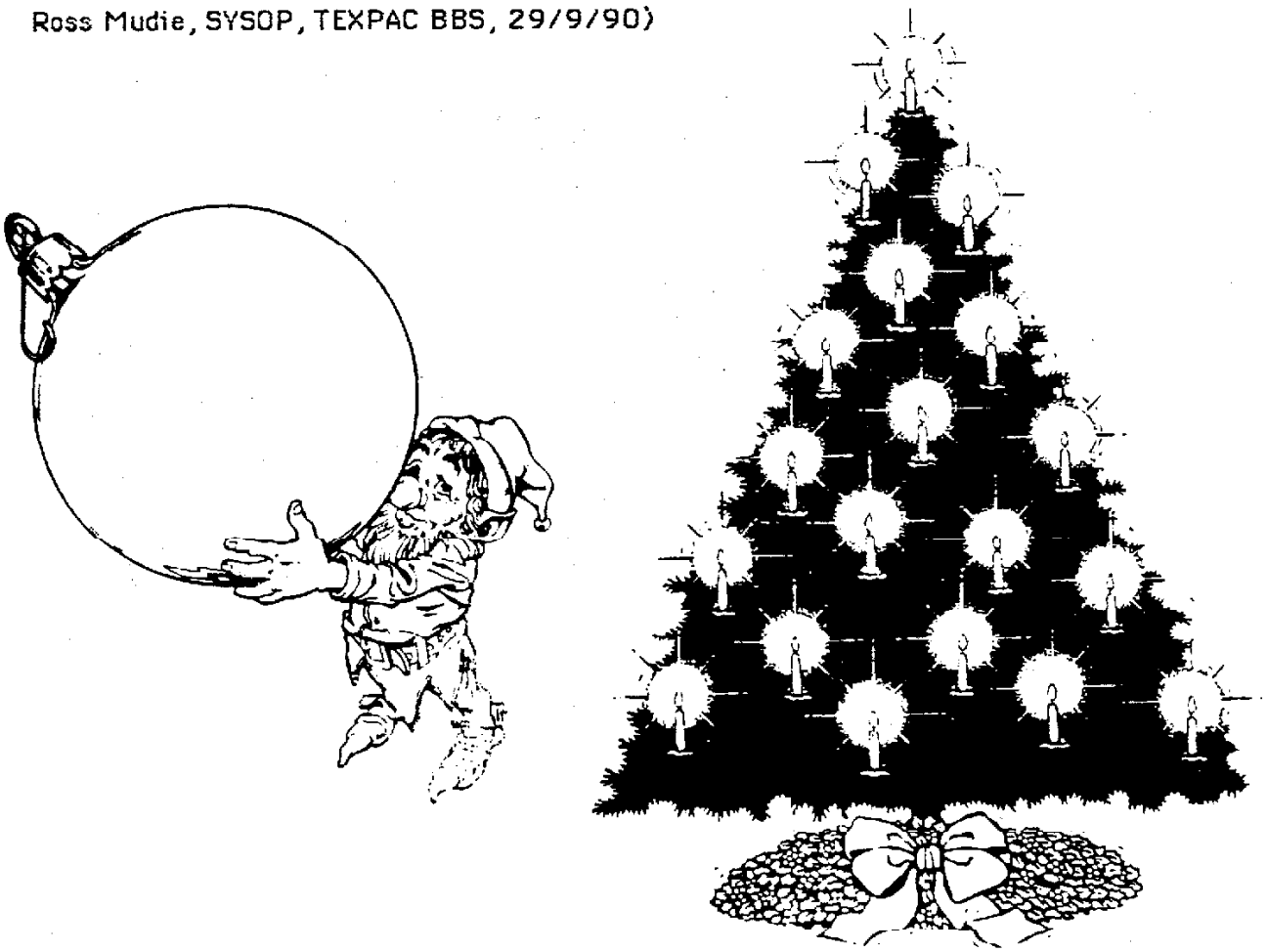
Technical Information was released by Texas Instruments and the future development of peripherals and software left to the Users Groups and companies like Corcomp and Myarc. Commercial and fairware have been written for the TI99/4A. Notably Funnelwriter by Tony McGovern and his son Will from Newcastle, Australia. It first appeared as an improvement to the TI Writer then was further developed into a full operating system incorporating the Editor Assembler and several useful Disk Utilities, the latest version includes routines for the 9938 based 80 Column Card, another addition to the user developed peripherals. Others include various memory expansions, internal Modems and Ramdisks. The QUEST Ramdisk by Neil Quigg of Newcastle with the assistance of Tony and Will McGovern as well as Ron Klienschafer allows for up to 1Meg. The TI99/4A is still a popular alternative to other microcomputers due to it's reliability, the low comparative cost and the great user support. The developments on the TI99/4A by user group members have kept the machine alive. At the recent Newcastle Microcomputing Exhibition the imagination of hundreds of children were captured by a small model train layout which was controlled by a TI99/4A 32K console using Extended Basic and hand wired custom peripheral interface.

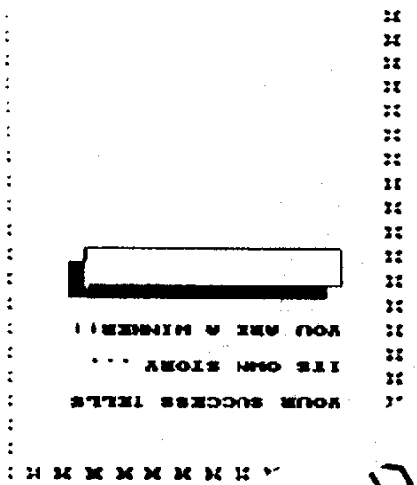
Problems of shortage of peripherals has been overcome by user groups who have designed disk controllers, serial and parallel interfaces, EPROM programmers and any other special hardware that may be required. Installation of a 32K Static RAM memory expansion in a TI99/4A console allows users of a seemingly simple console with cassette tape loading to be able to load and run assembly language games programs under Extended Basic. The ZENO board provides facilities to permanently

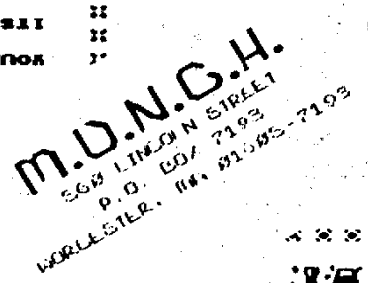
mount 32K memory, Extended Basic, Speech Synthesizer, Time of Day clock and up to 6 GROMS from commonly used cartridges inside a TI99/4A console. Maintenance is also available from the user groups. A very clever console tester has been developed which allows a seemingly "dead console" to perform its own diagnostics and in many cases allow the diagnosis of which chip needs to be replaced in less than 5 minutes.

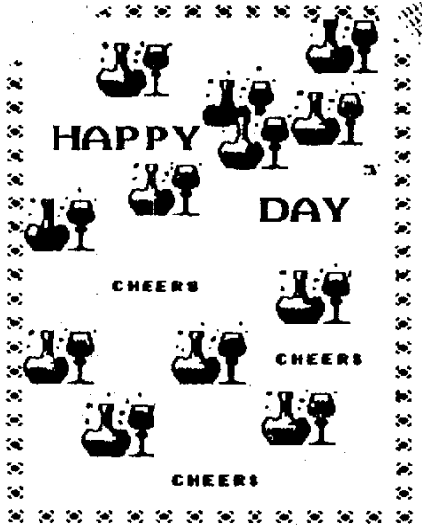
TISHUG in Sydney operates TEXPAC BBS (members only) on an expanded TI99/4A. The Newcastle and Sydney groups both publish comprehensive monthly magazines for their membership and these magazines are exchanged with other active TI user groups world wide. The monthly meetings of the user groups provide tuition in programing languages, "how to use" sessions for the latest application programs, help with "build it yourself" hardware projects and a cordial meeting place where friends can discuss their problems and triumphs in computing.

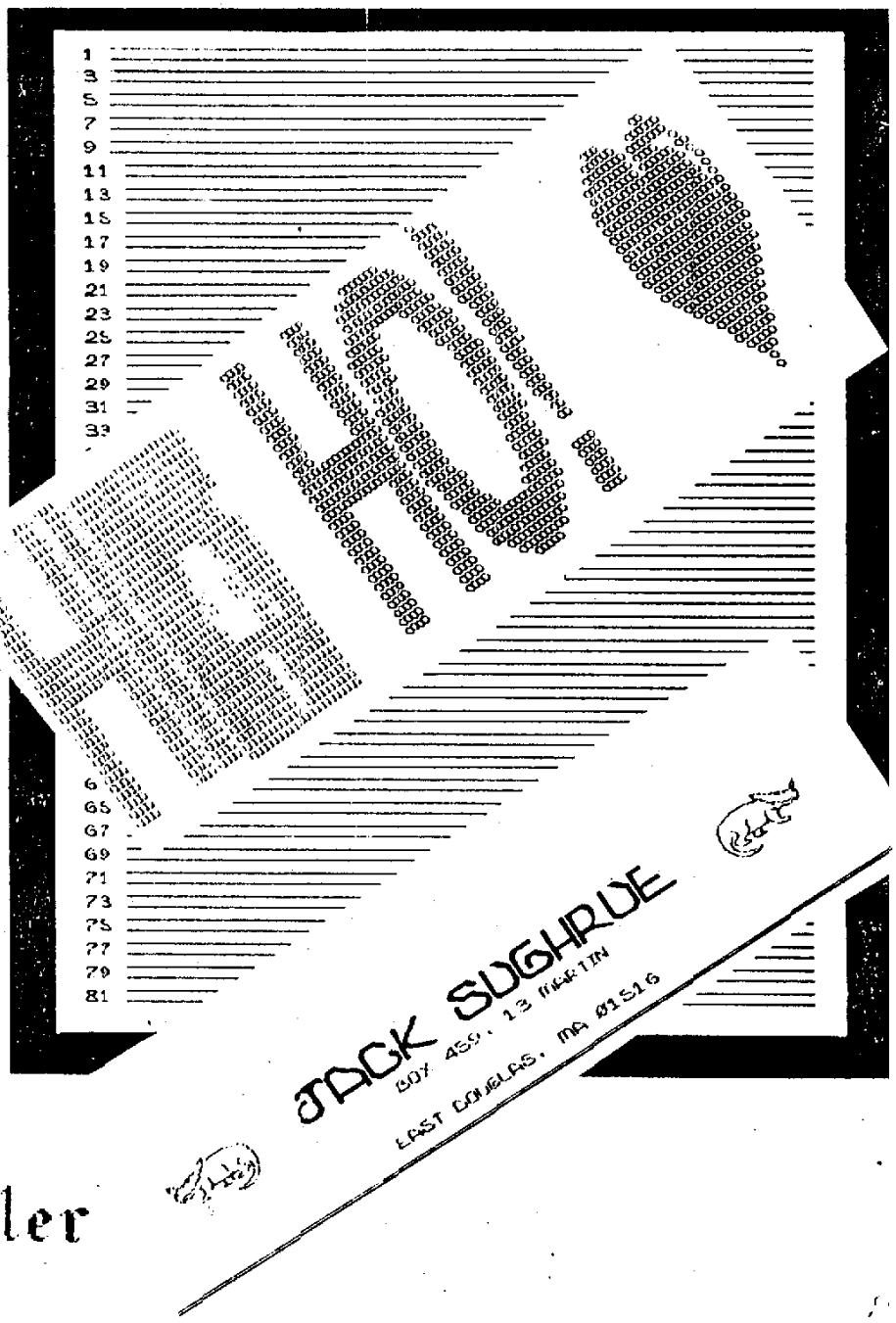
If you know someone with a TI99/4A in the cupboard, covered by dust because they think there isn't any support for the machine, then please do them a big favour and tell them about the user groups which are still very active. (David Winton and Ross Mudie, SYSOP, TEXPAC BBS, 29/9/90)








a COMPRODINE sampler

# TI-994A Refresher Chart

## LOADING A PROGRAM

| LOAD PROGRAM INTO MEMORY | OPTIONS — IF ERROR OCCURS | |
|---|---|---|
| | REPEAT THE LOADING | EXIT THE LOADING |
| OLD CS1 | R | E |

## SAVING/VERIFYING PROGRAMS

| SAVE PROGRAM ON CASSETTE #1 | SAVE PROGRAM ON CASSETTE #2 | VERIFY SAVED PROGRAM (YES) |
|---|---|---|
| SAVE CS1 | SAVE CS2 | Y |

## CHANGING COLORS

| CHANGE FOREGROUND AND BACKGROUND COLORS | CHANGE SCREEN COLOR |
|---|---|
| CALL COLOR (+ CHAR/COLOR CODES) | CALL COLOR COLOR CODE |

## COLOR CODES

| TRANSPARENT | BLACK | MEDIUM GREEN | LIGHT GREEN | DARK BLUE | LIGHT BLUE | DARK RED | CYAN | MEDIUM RED | LIGHT RED | DARK YELLOW | LIGHT YELLOW | DARK GREEN | MAGENTA | GRAY | WHITE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

## EDITING COMMANDS

BEFORE YOU PRESS ENTER

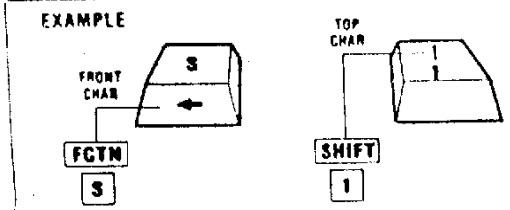
| DELETE A CHAR | INSERT A CHAR | ERASE THE LINE YOU ARE TYPING |
|---|---|---|
| FCTN 1 | FCTN 2 | FCTN 3 |

AFTER YOU PRESS ENTER. HOLD DOWN FCTN KEY AND THEN PRESS DESIRED KEY

| ENTER EDIT MODE | CURSOR LEFT ← | CURSOR RIGHT → | DELETE A CHAR | INSERT A CHAR | ERASE THE LINE BEING DISPLAYED (EXCEPT LINE NO.) | ACCEPT CHANGES AND DISPLAY: NEXT LOWER-NUMBERED LINE FOR EDITING | ACCEPT CHANGES AND DISPLAY: NEXT HIGHER-NUMBERED LINE FOR EDITING | EXIT EDIT MODE AND: IGNORE CHANGES MADE | EXIT EDIT MODE AND: ACCEPT CHANGES MADE |
|---|---|---|---|---|---|---|---|---|---|
| EDIT ENTER DESIRED LINE NO. | FCTN S | FCTN D | FCTN 1 | FCTN 2 | FCTN 3 | FCTN E | FCTN X | FCTN 4 | ENTER |

## USING KEYS WITH TWO CHARACTERS ON THEM

EXAMPLE




## RUNNING A PROGRAM

| RUN A PROGRAM | STOP PROGRAM (BREAK) | CONTINUE PROGRAM (AFTER BREAK) | LIST PROGRAM |
|---|---|---|---|
| RUN ENTER | FCTN 4 | CON ENTER | LIST ENTER |

## MISC COMMANDS

| LOCK KEYS INTO UPPER CASE | QUIT/RETURN TO MASTER SCREEN (LOSE ALL DATA) | CLEAR THE SCREEN |
|---|---|---|
| ALPHA LOCK | FCTN = | CALL CLEAR ENTER |

# Info Page.

## Monthly Meetings

Next general meeting is scheduled for January 22nd 1991 and I am led to believe it will be a software night where teh library will be opened and mucho disk copying and demoing will take place. This meeting is often not well supported.. Please make this the exception and bring along something YOU wish to demonstrate. (Read Ron's comments in this issue.)
Second general meeting will be at Jesmond community hall on February 26th starting at 7.30pm... Be there or we'll talk about you.

## Committee Meetings

The next Committee meeting will be held on Tuesday 12th February 1991 at Brian's home (all being well.) We will have to draw up an agenda for the rest of the year and finalise the finances etc for the QED ram-disk. The last meeting was a great success and was enjoyed by all who can remember. Come along to the next one and contribute your ideas.

## Magazine articles...

Response for the Christmas issue has really been great but we need more items for the next few issues too. Try to write a little about your experiences especially now we have a little break. Our regular contributers are certainly working double time... Give them a hand. Start now.

From all of us